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A WEEKLY  
ILLUSTRATED JOURNAL  
OF  
ART,  
CIVIL ENGINEERING,  
AND  
BUILDING.

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*"L'Architecture, c'est l'histoire d'un peuple qui s'écrit dans ses monuments."*

VICTOR HUGO.

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# THE ARCHITECT

## A JOURNAL OF ART, CIVIL ENGINEERING, AND BUILDING

### THE WEEK.

THE *Publishers' Circular* indicates fairly the state of trade in general. During 1884 there was a slight increase in the number of books over the year preceding. The new books were one hundred more. It is remarkable that the largest increase has been among books on the arts and sciences and illustrated books. Last year there were 432 new books of that class, and 159 new editions. In 1883 the numbers were 354 and 137. The classes of books which have fallen in quantity are juvenile books, *belles-lettres*, and essays.

M. IDRAC, the sculptor, died of typhoid fever on Sunday last in Paris, and a fine career has thus been cut short. Although he was only in his thirty-fifth year, M. IDRAC had, by his works, gained the distinction of the Legion of Honour. He was one of the winners of the Prix de Rome. At the time of his death he was engaged on a statue of ETIENNE MARCEL for the new Hôtel de Ville. The commission was obtained by competition. Among other works by him were figures of SALAMBO and MERCURY. It is only a year since M. IDRAC was married to Mdle. BALLU, a daughter of the distinguished architect.

THE condition of labour in the United States is exciting quite as much grumbling as is heard in England. In many trades the workmen are complaining that they are overworked and underpaid, and that "piece work" is ruinous in most instances, as the men injure their constitutions for a big day's pay. An employer is tempted to reduce the price, and the workman is obliged to do the same amount of labour for smaller pay, his wages being measured by what he can be forced to do, and not by the value of the work performed. The brickmakers in the Philadelphia district claim that great injustice is done them by hiring men, say at 15 dollars to 40 dollars per month—few getting the latter figure—and exacting a certain amount of labour per day; and should they break down in the middle of the month, they lose what they have actually earned, getting no pay for what they have done. If ill they are charged 75 cents for board, and that of the cheapest kind. An American foreman who has been employed in erecting some patent furnaces in England has stated that from what he saw the English working people are better clad than those in America; that they live quite as well, but more economically; that they are far more independent, are better organised, have more holidays, and seem to be better contented.

THE exhibition at Antwerp, which is to be held this year, is likely to be attractive if the proposed plan is carried out of decorating the different sections in a style that will be suggestive of nationality. But what is the English national style, unless the mode that is now in favour is accepted? A Mediæval style will be adopted by Austria, and among the exhibits will be some splendid specimens of ironwork belonging to the Emperor. The French, who are proud of their African conquests, propose to bring over fifty families from the West Coast. The area, which is to

be lighted by the aid of electricity, will be over 114,000 square metres. About 18,000 square metres will be occupied by France, and 30,000 by Belgium.

ALTHOUGH there is exceptional dulness in the trade of Paris, the members of the Municipal Council have been true to their traditions by voting, on Sunday last, the sum of 300,000 francs, which is to be expended on the purchase of works of art during the present year. When will their example be followed in England? By their annual purchases of pictures and statues the Council uphold an interest in art which is not to be measured by their outlay. Artists are brought into notice through means of the vote, and the public are excited to purchase quickly, in order that they may not be forestalled by the municipality.

MR. JOHN FRASER, jun., of the Aberdeen Granite Works, died on Monday last, at the early age of thirty-five. He was well known among architects and builders as the representative of the firm of JOHN FRASER & SON. Many large contracts had been entrusted to him, one of the latest being the supply of granite for the new Stock Exchange, London, of which Mr. COLE is architect.

It is generally admitted that no artist in Paris is better fitted to undertake a subject relating to what may be called Early Mediævalism than M. J. P. LAURENS, whose *Death of St. Geneviève* is one of the most remarkable works in the Pantheon. Being fascinated by THIERRY'S *Temps Mérovingiens*, he prepared several drawings in black and white to illustrate that history. They displayed the painter's tragic power, and that painstaking manner which M. LAURENS never abandons even when making outlines to be copied. The designs have been reproduced by the photogravure process, and are considered to be the most attractive of this season's publications in Paris. An English publisher who had the enterprise to give M. LAURENS a commission for an illustrated edition of "Macbeth" or "Hamlet" would be well repaid.

THE diaries of Messrs. HUDSON & KEARNS for the new year are marked, as usual, by solicitude to give information that is likely to be required in architects' offices. The summary of cases which have been decided during the past year is a useful addition, and presents many points of interest. Thus, under the head of "Contract," we note that, in an offer by telegram, "all the terms offered must appear to be included on the face of an acceptance. An acceptance by letter to an offer by telegram may justify the withdrawal, as being evidence of unreasonable delay, it being presumed that a prompt reply is expected." We are also informed that, under the Employers' Liability Act, "an injury arising from a defect in a ladder borrowed by order of the foreman does not fall within the Act"; and that in another case it was laid down that the master must be cognisant and the servant ignorant of the danger to establish a claim. Suggestions like the preceding will often be found useful.



## THE BUILDING TRADE.

IT is inevitable that with the commencement of a year men of business should consider their prospects, and if ever thought was needful it is at the present time in England. From every part of the country complaints are heard about the scarcity of orders, and the efforts which are made by foreigners to carry off those which are likely to be profitable. The correspondence of English representatives abroad is filled with doleful pictures about the state of trade, and it would seem as if there was an almost universal agreement among one class of men to ruin the other class. The shrewdest political economists are unable to point out any new impediment to business. There are the same reciprocal wants and the same means to satisfy them. In fact, the conditions in things and in himself which have made man an animal that exchanges are still in a normal state. The earth is as productive as ever, there are no plagues, war is confined to a limited part of the globe, and the amount of specie is larger than before.

Is it any exaggeration to suggest that the evil is in a great measure a result of imagination which has been exercised through insufficient knowledge? But as there are physical epidemics, there seems no reason why there should not be others of a mental kind, and as money is the prime mover of modern life, it is not absurd to suppose that the visitation (if it be one) should be inseparably connected with finance. In primitive bartering, buyers and sellers knew one another, and saw the articles which passed between them. Modern trade, on the contrary, is deprived of tests of that kind. Credit is akin to credibility, or in other words, to trust, which is based on qualities which are created by imagination. What can a shareholder in a bank or a company know of the uses which are made of his money unless his imagination comes to his aid?

With a country like England, which has become a creditor for all, there must be a constant liability to panics. A failure in Australia or Shanghai or San Francisco is felt in Lombard Street. Losses are magnified by distance, and speculators who one day dreamt of impossible profits, and are willing to put everything to hazard, will, on the next, become doubtful of the Three per Cents. Take, for example, what occurred so near as Glasgow, and see how it has affected the building trade all over the country. A great many buildings were erected in that city on money which had been advanced by one or more of the local banks. It is not at all certain that the buildings were needless. If the bank had not collapsed through bad management, leaving many of the buildings incomplete, it is possible that purchasers would be found for them. But the cavernous blocks were all that remained, and they were transformed into a standing warning against the wiles of architects and builders. If a man in Devonshire wished to invest a part of his spare capital in houses or shops, a good-natured friend was sure to be found who pointed out the example of Glasgow. The profits which have been derived from building in every town counted for nothing beside that dismal failure. The true state of the case was never stated, and if it had been it would hardly be credited among the shrewd men of Glasgow. Their minds were inflamed, and a profit and loss account assumed a portentous aspect.

It is owing to a similar cause that railway enterprise is still affected by the failure of OVEREND & GURNEY'S bank. The managers of that concern advanced money on conditions that would be absurd to any pupil in a building surveyor's office. The most venturesome building society would not advance money so unwisely. The bankers knew nothing about the cost of earthwork and masonry, and they imagined that, if enormous prices were entered in a schedule for labour, there must be corresponding profits. Money was accordingly almost forced on contractors, lines were projected in the hope of advances from the bank, and everyone remembers the result. Shareholders suffered, and a prejudice against engineering work was created which will not be easily dispelled. When there is speculation of that kind, which was as wild as any transactions in a lunatic asylum, it is not surprising that there are periodical crises. A political economist like the late Dr. JEVONS could find no satisfactory cause for them nearer than the sun, and he was able to demonstrate to the satisfaction of mathematicians

that the sun-spots were responsible for the periodical depressions under which trade suffers. But to plain men the freaks of a succession of OVERENDS and GURNEYS and of their dupes will appear to be a more rational explanation.

It is not our purpose to propose a remedy that will make trade in general prosperous. So long as the world has to trust to imagination for a guide, crises will arise. If one company becomes successful it creates several others, until a loss brings distrust; it is followed by a period of depression, then there is one of recovery, and so the movement continues in perpetual ebbs and flows. But there is no reason why building should be put on the same level with projects which are concerned with the problematic existence of a vein of metal several hundred yards under ground in some out-of-the-way place in Central America, of which nobody ever heard before the name appeared in a prospectus. If any man will use his own reason he can discover for himself how far building is a venture. It is absurd to suppose that an English town is over-built. A speculator, who believes himself to have more foresight than any architect of his acquaintance, can erect a palace in a noisome district where no one dwells who can go elsewhere. But follies of that kind should not be taken as tests of building investments. With ordinary care buildings can be made to return a sum that is proportionate to their importance as an enduring security. They have also the advantage of coming more under the control of investors than any railway, say in Java, could well become, and are less liable to the risks of competition from unexpected quarters.

If considerations of this kind are urged on people, they are likely to refer not to their own town, but to Paris or to Glasgow, as evidence that in regard to building it is very easy for the supply to be in excess of the demand. Neither case is apposite. In Glasgow, as we have said, a great many unfinished houses were abandoned at a time when everybody was distrustful of his neighbour's solvency. Paris should never be taken as a test, for building is very often conducted there in defiance of political economy, and the buildings are like the relief works in Lancashire and elsewhere, undertaken with a view to escape the consequences of enforced idleness in places where wealth becomes a temptation. In the same way it will be found that in the majority of instances where building has been found unprofitable, some other cause has been at work besides the costliness of the construction. Indeed it may be affirmed that, if everything be taken into account, building in England is one of the safest and most profitable means of investment.

English people cannot fail to understand their own interests, and it is safe to predict that in a little time there will be a better appreciation of this form of security. But, from a financier's point of view, building may be said to have more difficulties opposed to it than any other kind of enterprise. Capital is always affected by the slightest imputations, and a groundless rumour has often destroyed the prospects of a company. At the present time there is a perpetual publication of imputations against English buildings. Every man who writes a letter to a newspaper about a leakage in a drain or in gas-tubing, or asks the public to sympathise with his sufferings from a smoky chimney, creates distrust, and wherever distrust exists there must be hesitation in dealing with capital. If the same tactics had been adopted in regard to railways or waterworks or mines, the lists of the Stock Exchange would show a very different value for some of the shares that are in constant request. What is most needed at the present time is the creation of confidence in building, and towards that creation every architect and builder can do something.

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**The Street Memorial.**—The memorial to the late Mr. Street, R.A., is in course of erection in the central hall of the Royal Courts of Justice. It consists of a statue, surmounted by a canopy. The memorial will be erected in the second bay of the central hall, on the right-hand side entering from the Strand. The sculpture is by Mr. H. H. Armstead, R.A., and the memorial has been designed by Mr. A. W. Blomfield, M.A.



## M. MAILLART.

[BY A CORRESPONDENT.]

THE art-world of Paris has its Olympus, but the deities are not immortal. DAVID, GÉRICAUT, LAFOND, DROLLING, INGRES, are among those who have had fervent votaries, but whose cult has died out. At present the only representative of Olympus that commands respect is EUGÈNE DELACROIX. The youngest painter would hardly wish to become like unto him, for it is too clear that philistine patrons are shy of experiments in colour, but in every studio there is a firm belief that if that artist had put forth all his powers he could have surpassed any of the great Italians. TITIAN, it is held, was not so expressive in colour, while his field was more limited. DELACROIX, according to his worshippers, was the BYRON of painting. While there was sunshine around his head there was a storm in his breast, and the struggle between light and darkness is evident in his works. He was equal to undertaking every scene in the tragedy or comedy of life, and passed, as a devotee says, "from saints to warriors, from warriors to lovers, from lovers to tigers, and from tigers to flowers." It is not necessary to inquire whether a painter ever stands before a picture of DELACROIX when he is in a difficulty. What worship is there on earth that can be said to be perfect? But among artists, and especially those who inhabit that district in Paris which lies between the Quai Malaquais and the Boulevard du Mont Parnasse, if words could be taken as a test, EUGÈNE DELACROIX might be considered as having reached a throne near the summit of the Sacred Hill.

If any of our readers should be inspired by a hero worship with DELACROIX for its object, they may be induced, like the writer, to make a pilgrimage to the studio that has been rendered sacred by the presence of the great painter. If they have that intention, it would be well, in the first place, to take a look at the studios and residences which have been erected of late years in the neighbourhood of the Parc de Monceau, and if they are able to discover the prices of the buildings so much the better. Then let them drive to the quaint old square, called the Rue de Furstemberg, where DELACROIX dwelt and painted, and they cannot fail to be impressed with the difference between the conditions which surround art in our time, and those which prevailed when LOUIS PHILIPPE was king. The modern painter has to take up his abode in a fashionable quarter. DELACROIX preferred a place, which, although enclosed by houses and approached by narrow streets, still retains the quiet which befits ground that formerly was within the walls of the Abbaye St.-Germain, and preserves the name of a cardinal who was abbot. His studio will be discovered in a secluded corner of the square, and the pilgrim will be greeted with kindness by its present owner, a painter who has also attained fame, Monsieur DIOGÈNE ULYSSE NAPOLEON MAILLART.

If the history of a house is worth anything, if walls can be suggestive of scenes or thoughts, then there ought to be inspiration in this *appartement*. Fortunately there is nothing seen which will divert the thoughts from painting. Japanese and other knick-knackery have their uses, but here they would dispel the associations. We see none of those surroundings which are often suggestive of theatricalism. The anteroom is pervaded by an air of comfort that is not everywhere felt in Paris, and the studio is a workroom rather than a cabinet of curiosities. Around paintings will be seen in various stages of progress, and the visitor, if he has had much acquaintance with studios, cannot fail to be impressed with the remarkable versatility of the artist. It would be difficult to say what is M. MAILLART's speciality. He paints classical subjects, scenes from Mediæval history, revolutionary episodes, *genre*, portraits, idylls, scripture pieces; he has illustrated SCOTT's novels, and executed immense decorative works; with apparently equal delight to himself he can represent a scene from HOMER or from a child's story-book. M. MAILLART is a professor at the Gobelins, and, to hear him talk, a stranger would think that his life was devoted to the history of art in relation to textiles. But at the Gobelins he had M. CHEVREUL for associate, and OWEN JONES was never more of the *savant*

than M. MAILLART in explaining that chemist's theory of the simultaneous contrast of colours, and in laying down the laws which should govern the use of colours in all things from frescoes to bonnets. How was so much knowledge acquired? A brief *résumé* of the artist's life will answer the question.

In December 1858, a peasant youth of about eighteen and his father stopped at a humble inn at the outskirts of Paris. That youth is now M. MAILLART, the painter and professor. In the village school he drew better than other children, and it was proposed to make a tapestry weaver of him. After a trial it was suggested that Paris was a more promising field for so much ability, and accordingly M. MAILLART *père* left his work, and brought his son in a wagon to the capital. There must have been many sacrifices in the peasant's hut to find means to pay the expenses of the experiment; but, so poor was he, it was difficult for young MAILLART to discover a school that would suit his purse. At last he entered one in the Rue de l'Ecole Médicine, which is not far from his present residence. With pardonable pride he displayed his copies of woodcuts and the smooth lithographs of JULLIEN, and, in consequence, he found himself placed in the elementary class amongst children of eight. He took the rebuff in a right spirit, endeavoured to unlearn what he had taught himself, and in less than four months his place was in the first division. He was advised to enter the Ecole des Beaux-Arts, and gained the fourth place amongst the crowd of competitors for admission.

In the latter school he was fortunate in being noticed by LEON COGNIET, an artist who had been a benefactor to many a struggling youth. COGNIET appealed to the authorities of the department of Oise on behalf of MAILLART, on whom in consequence a pension of five hundred francs was bestowed. Twenty pounds a year is not much of an allowance, but, with youth and art for companions, many men have contrived to be happy on it, and some, like BÉRANGER, would give the remnant of their life for one of the days "dans un grenier qu'on est bien à vingt ans!" In spite of his twenty pounds, MAILLART was unable to pay the fee of twenty-five francs a month that was required from students in COGNIET's *atelier*, and with characteristic pride he declined to accept the invitation of the old master. It was only by a kind force that his scruples were overcome; but, after six months' attendance, COGNIET's *atelier* was unfortunately closed, and young MAILLART became an assistant to M. CORNU.

M. MAILLART had early gained a prominent place among the students in the Ecole des Beaux-Arts. In 1863 he was advised to try for the Prix de Rome, but was unsuccessful. The year following he carried off the coveted prize, as was predicted by his rivals, among whom were the late LOUIS LOIR and M. J. P. LAURENS. The subject of the painting was taken from one of ANDRÉ CHÉNIER's poems, and represented HOMER fallen by the wayside and protected against savage dogs by three young shepherds. When M. MAILLART arrived in Rome the French school was directed by M. SCHNETZ, then eighty years old, if not more. It is the custom that every new-comer in the Villa Medicis should be initiated by the student whose term has nearly expired, and thus M. MAILLART became the *clou* to the late BENJAMIN ULMANN. His companion was DESCHAMPS, the sculptor, whose early death was generally deplored, and M. MAILLART, who possesses a splendid head and vigorous physique, often posed for the *Discobolus*, the work by which his friend will be remembered. It is now in the Lyons Museum. An attack of Roman fever drove M. MAILLART to Naples, and then to France. During his term he was also able to spend three months in Venice.

M. MAILLART has acknowledged that on his first sight of their works he was not impressed so much by MICHEL ANGELO and RAPHAEL as he had anticipated. The experience of Sir JOSHUA REYNOLDS was of the same kind, for he tells us that he was abashed when he found that his ignorance prevented him from realising the masterpieces of art. The first picture that attracted M. MAILLART was the *Deposition*, in the Vatican Gallery, the chief work of CARAVAGGIO, and one of the best examples of the School of the Naturalists. It was carefully copied by M. MAILLART, and inspired by it he painted a figure of *Samson*, which was to serve for his first year's *envoi*. In 1866 he sketched his



*Helot*, which was afterwards completed as a picture. It was among the works which were chosen to uphold the fame of French art at the Vienna Exhibition, and was awarded one of the forty medals. It is now in the Museum of Carcassonne. This picture is most pathetic. A young helot is seen chained to one of the primitive stone mills, which he has to turn. Overcome by fatigue he is seated on the base, one hand resting on the beam, while the manacled arm hangs across it. The lassitude of the figure suggests oppressive toil, to which mind, as well as body, has succumbed. In contrast with this forlorn man is a delightful group of a shepherd, with his wife and child, returning from the field, the woman resting against the man, while the child is held astride on the crook. Although passing near the slave they are as indifferent to him as if he were a grain of dust. The picture suggests the dark side of Greek life, and appeals at once to the sympathy of the spectator. One of the *envois* which every prizeman has to prepare is a copy of a painting by a great master. The work selected by M. MAILLART was TITIAN'S *Peter Martyr*, in SS. Giovanni e Paolo, Venice, but he had scarcely set all his scaffolding when the picture and other works were destroyed in the fire of 1867. CORREGGIO'S *Saint Gerome*, in Parma, was afterwards substituted as the *envoi*. His last work as a student was a large work, *Moses and the Brazen Serpent*, containing more than fifty figures, and in which the influence of MICHEL ANGELO was seen. It was exhibited at the Salon, 1870, and some of the jurymen considered it deserving of the Médaille d'Honneur for the year. Afterwards it was purchased by the Government and was placed in a chapel in the Tuileries, where it was destroyed by the Commune.

M. MAILLART was, at the instance of M. CHARLES BLANC, appointed Professor at the Gobelins in 1872, and his pupils have been remarkably successful. In consequence of his reputation he was afterwards elected one of the jury of the Ecole des Beaux-Arts, including sometimes the competition for the Prix de Rome. It would occupy too much space if we attempted to describe all the large pictures which have been produced by M. MAILLART since his return from Rome. The titles of some of those which were exhibited in the Salon will indicate their character, viz.:—*La Néréide, Le Héros tueur de monstres, Baptême de Saint Augustin, Rimembranza, Thétis armant Achille, Manon Lescaut, Le Héros et le Poète, La Mort de Sainte Monique, L'Amour berger, Le Jugement de Paris, La Mise aux fers de Prométhée, Etienne Marcel et la Grande Ordonnance de 1397*. The artist's preference would thus appear to be towards subjects which are taken from Greek mythology and poetry. It is a wide circle of art which comprises DAPHNIS and CHLOÉ, ACHILLES and the blind HOMER, and M. MAILLART has traversed it successfully. A word should be said, however, about his portraits. One of Madame MAILLART, representing that lady seated at the foot of a tree, in an orchard, attracted much attention in the Salon of 1873, and was honoured by a second medal. Since then commissions for portraits have been forced on the artist, including those of many celebrities. The Americans in Paris have been among M. MAILLART'S patrons. The only works which the painter had time to complete for the Salon of 1884 were two portraits, one being of the French General, Count DE CLERMONT-TONNERRE.

From our brief sketch it will be evident that M. MAILLART is an example of courageous perseverance in overcoming obstacles. A student of the Ecole des Beaux-Arts, a Prix de Rome, he feels that it is incumbent on him to uphold the principles of French art. If M. MAILLART had to be described by an Englishman who did not know him as a painter, he would be said to be "a man with a backbone," and his career corresponds with his appearance. Fashion has had its influence on French art as on other things, and it is not difficult to gain money by veering with the times. M. MAILLART, while avoiding the stiffness that suggests only the posed model, has shown that in the slightest work it is possible to preserve the influence of the great masters. In art as in life he insists on a man upholding what is best, let the consequences be what they may, and a devotion to principle is shown in his success as a teacher, in his figure pieces, and in his portraits.

## DRY ROT.

BY GEORGE MURRAY.

AMONG agents in the destruction of timber and wood-work generally, at least in our climate, fungi deserve the chief place for completeness and rapidity of destruction. Their ravages cannot be undone, and complete renovation of the regions attacked has generally to be made in order to render the repair effectual. The mode of life of such organisms can hardly fail to be of interest even to those who regard them only from the economic and practical point of view. That they are plants is a matter of common knowledge, and from this it follows that they share with other plants the fundamental and essential conditions of life. In their behaviour towards the forces which operate on them from the outside, such as heat, light, cold, moisture, and the like, they agree with other plants. There are, that is to say, for each phase in their development—their germination, their growth, the processes of vegetation and of reproduction—a certain degree of temperature, called the *minimum*, below which such process may not go on; a *maximum*, above which the same does not take place; and, between these extremes, an *optimum* temperature for each particular phase at which it proceeds with the greatest activity. The same is true of the other conditions of life (moisture, light, and the rest), and though the degrees of these vary with different species of fungi, yet they all hold together pretty closely.

The remarkable fact should be noted here that fungi, like other plants, will survive a much higher temperature if they be dry than in a damp condition. In the modes and conditions of life they resemble other plants, except in the important respect of their way of getting a living. Green plants, as we all know, are the ultimate food-producers of the whole animal kingdom. Directly or indirectly we come to them at last, and the profound truth that "all flesh is grass" has been recognised from the earliest times to the days of comparative physiology. These green plants are the only organisms which are able to convert inorganic matter into organic matter—into food, in short, though an acute observer has recently discovered an enterprising and minute green animal which in the most praiseworthy way does this for itself as the plants do. This ability resides in the green-colouring matter, and the food is prepared primarily for the plant's own use; for example, the starch stored up in a potato-tuber is but the "reserve material" for a fresh outgrowth of the plant. However, this is but a feeding of themselves to fat others, and along with the animals certain other plants, such as fungi (which never possess the proper green-colouring matter, and are therefore unable to assimilate food for themselves), share in the feast thus prepared for them. Fungi, then, are unprovided with the means of converting inorganic matter into food, and are therefore driven to obtain from other plants the carbon compounds elaborated honestly, as it were, by the latter. There is little honour, however, among these thieves, since fungi often attack animals, and even other kinds of fungi, to rob them of their "unearned increment." We see thus how it comes that fungi are not found maintaining themselves like other plants, but growing on and destroying vegetable products, such as timber and the like.

The case may be further illustrated thus. Everyone knows that many diseases of living things are caused by fungi. One cannot take a walk in the country without seeing fungi growing on living forest trees—large ones on the trunks and branches, and minute (microscopic) ones discolouring the foliage. There is the fungus of the potato-disease, that of corn mildew, and very many others all familiar to us. Well, we can discriminate between such fungi as grow upon living things, producing diseases in them; and such as grow upon and promote the decay of dead matter, once living and forming part of a plant or of an animal. Thus a line can be drawn between the fungi called *parasites*, attacking living forest trees, and those such as "dry rot," which confine their depredations to the dead timber. The latter kind are called putrefactive fungi. For example, the fungus which attacks the living gooseberries on the bush is a parasite, and the other which grows upon gooseberry-jam is putrefactive. And here it may be remarked, in a parenthesis, if housewives were only careful to



firmly fasten down in an *air-tight* manner the paper covers of their jam-pots *at once while the jam is still very hot*—it cannot be done too soon—they would find it perfectly safe from fungus mould, if stored in an ordinary dry cupboard. This is not merely untested theory, for the truth of it can be demonstrated by anyone who strictly observes these simple conditions.

However, though in ordinary speech one can generally describe a fungus as either parasitic or putrefactive, and though these are the only modes of life open to an organism of this kind, yet brief mention must be made of certain others which taste the sweets of both ways of subsisting. That is, there are some kinds of fungi which, during one phase of their existence, are content with the dead remains of a plant or of an animal, while in the next they rise to attacking a living organism. There is nothing striking in the appearance presented by a fungus which enables one to say of it that it is parasitic or putrefactive; the whole affair is one of function rather than of structure, and, while one kind may be purely a parasite, its nearest ally in *structure* may be putrefactive. It is true, nevertheless, that "function makes the organ," which is to say simply that an organ discharging a special duty becomes modified in time by it, and when this duty is a parasitic one the modification that takes place is towards degradation. So one finds Nemesis pursuing these dishonest livers, if one may venture to describe them so; the parasitic, and next to them the putrefactive, are the degraded among plants. Of the higher flowering plants, the mistletoe for example, which is a partial parasite on many trees (though hardly ever on the oak), is a degraded plant compared with certain others of its allies.

In making clear the character (while blackening it, if I may be permitted the paradox) of these organisms, the intention is to show how it comes that they are regarded by us as enemies. They are in competition with us for the possession of certain matter; they intercept our food supplies, as in the case of the potato disease, &c., or they treat as a food supply for themselves what we would otherwise use—such as timber. On the other hand, there are fungi such as the yeast fungus, of the utmost economic benefit to mankind, which may be merely mentioned to show how rash it would be to doubt the utility of the existence of these organisms, so far as we are concerned. The duties they perform in the wide economy of nature are beyond the scope of an article on domestic fungi.

By taking the dry rot fungus as a type of its fellows, and examining it, one may get at a knowledge of the whole group—the essentials of the structure and life-histories, since it is not remarkably different from others in these respects. The first and most superficial result of examining a mature specimen of it is some astonishment that it ever came to be called *dry rot*. It certainly attacks wood, incorrectly supposed to be dry, and in some states undoubtedly the fungus has a parched look, but most likely the dry and brittle state of the wood, after the attack, accounts for the name. However, the well-developed dry rot fungus is so much the reverse of dry that it distils, as it were, pretty copiously, drops of moisture, and from this habit has earned the descriptive name of *lachrymans*—weeping—on its own account, without reference to its being the cause of that state in others. "*Merulius lachrymans*—the dry rot fungus"—is not a very consistent looking name. It is sometimes supposed to be congenial to the scientific spirit to proclaim what is commonly deemed black to be in reality white, but the present apparent contradiction between dry and wet is easily enough explained. The wood attacked is unduly damp when the fungus fastens upon it, and, along with other things, the moisture is extracted from it, and partly given forth by the fungus which leaves the wood in the dry and crumbling state in which it commonly meets our eye. The last aspect of it is the one which appeals to popular observation, and has earned for it this popular name; while the fungus, the agent in the destruction and the extractor of the original dampness, bears likewise its appropriate name.

The mature fungus is commonly spread out like a cake, often several feet in expanse, and is of a fleshy consistency. In colour it varies from ochre yellow to a rusty hue; but on the under side it turns somewhat violet, and is more downy, while the margin is white and frequently swollen and folded,

as it were. The watery fluid is given off at the period of ripeness, and is at first clear, but gradually gets milky. The odour of the fungus is bad enough, but that given off by the fluid is truly abominable. This is the ripe fungus—the outcome, as it were, of those parts of it that are accomplishing destruction in the interior of the wood. These, the special agents of destruction, are fine filaments which traverse and break down the fibre of the wood, and render it thus so brittle. The name which these filaments bear is the *mycelium*, and it serves precisely the same end as the "spawn" of mushrooms, and is, besides, of very similar structure. If we have a quantity of soil traversed by mushroom "spawn," or mushroom *mycelium*, and if we place it where it will be damp and warm, a crop of mushrooms may be expected in the natural course of things. It is just the same with the spawn or the *mycelium* of the dry-rot fungus.

It has its own optimum degree of temperature and optimum amount of moisture, &c., and when these are present, as they frequently are in damp dwellings, the spawn will proceed with its growth and development at the fastest rate. It will extend its field of operations, and will fructify in the unpleasant manner described above. Let the temperature fall below or rise above this optimum, and the growth will slacken and finally cease when the minimum or maximum is reached. The same is true of the amount of moisture present, and so on.

Now this large and unpleasant cake-shaped body so easily-recognised is in reality the fruit of the fungus, and, like the fruits of higher plants, it is nourished and brought to perfection by means of these roots—the *mycelium* or spawn filaments which penetrate the wood. Like fruits, moreover, it bears seeds, and the seeds—or *spores*, as they are properly called in the case of fungi—are produced on this cake in vast numbers, literally in millions. They are exceedingly minute, and a powerful microscope is needed for seeing them at all. When observed with the microscope, they look like small eggs, and each one of these millions of spores is endued with the power of reproducing dry rot; of setting up anew the destruction of wood; of producing a similar cake-like mass and another generation of these seeds of destruction. How, with such a fact before us we may well ask, does such a thing as timber continue to exist at all? Well, as we have already seen, it is only in the presence of certain degrees of temperature and their accompaniment of certain degrees of moisture, and so on, and, moreover, on certain states of timber that these bodies are able to grow afresh. Not only so, but the incomparably vast majority come to naught, since millions upon millions fall on stoney ground and by the wayside, and thus perish. In fact, it is only the very, very few that have any chance at all, and the production of these untold numbers of potential dry-rot fungi is merely a provision against the thousands of adverse chances.

We may, however, be sure of one fact, namely, that wherever circumstances combine to render wood a fit host for them, there such spores will settle. They are present in vast numbers in the air ready to take advantage of such a set of circumstances. Improperly-selected wood—unseasoned it may be—and often wood originally sound, but placed in a damp or otherwise improper situation, offer suitable ground for the operations of dry rot. Such a condition of wood, in fact, in respect of moisture, temperature, and so on, as falls within the maxim. and minim. degrees of germination of the fungus constitutes a predisposition towards dry rot, as a physician would say. The nearer such degrees approach the optim. in respect of these conditions, the more favourable is the field for the fresh growth of the fungus.

(To be continued.)

#### FRENCH AND ENGLISH SURVEYING.\*

IT was generally acknowledged that the most successful part of the educational section of the Health Exhibition at South Kensington was the room assigned to the Frères des Ecoles Chrétiennes. The space was insufficient to show more than a fraction of the examples which had

\* "Arpentage, Levé des Plans et Nivellement." Par F. J. C. Paris: Poussielgue Frères. Tours: Alfred Mame & Fils.



been sent from the Continental schools belonging to the Brothers, and the works which were unpacked were, we understood, even more remarkable than those which were to be seen on the walls and tables. But enough was visible to suggest to the initiated how great a revolution has been accomplished by the Christian Brothers in their schools. The teachers have not been well treated, in France more especially. French wit when they are the subject loses its point, and things have been written which are enough to make VOLTAIRE arise from his grave, and in rage turn Capuchin. Since France became a Republic the Brothers have known to their cost what is meant by the insolence of office, and when other means failed, the ingenious principle of "laicization" was devised in order to starve them into a surrender. And yet those derided and oppressed men are enabling the youth of France to compete in technical information with the rest of the world. England is suffering through the knowledge which has been instilled in the schools of the Brothers on the Continent; but we must be just to our opponents, and recognise the devotion by which children of the humblest classes have been transformed into men who are able to bring science and art into their workshops. In this country it is difficult to believe that teachers in schools can be anything but theorists, and IAGO expressed the national prejudice when he spoke of "the bookish theoretic," the "mere prattle without practice." Whether it is wise to make schools become, as it were, porches for factories is too wide a question to be discussed here, but it must be admitted that the industrial struggle between nations has assumed greater intensity of late years, and that the very existence of a country is dependent on the technical skill of the inhabitants, of which the beginning must be found in elementary schools. Simple people could at one time believe that—

When house and lands are gone and spent  
Then learning is most excellent.

But those Arcadian days have passed away, and all the books in the Bodleian, with an army of professors, could not console Birmingham if it saw the metal trade transferred to France or Germany.

Unless we are mistaken, the success of schools is mainly owing to the existence among the Brothers of experts in sciences and arts and in nearly all trades, who have been attracted from the world. We refer as a proof of mastery to the books on mathematics which were to be seen at South Kensington, and were very different from those we might expect from a Cambridge man, for in them there was a clearer recognition of the applications of the science than is usual in English teachers. One of the series is now before us, and it is sufficiently ample to be taken as an authority on land and engineering surveying of every kind, levelling, setting out, and contouring, as conducted in France. It will enable anyone to compare a few points of practice with those adopted in this country; but if a French writer has any wish to follow our example, it may be stated that there is no English school-book available for his purpose. Although so large a proportion of schoolboys in this country are destined to become colonists, it is not considered requisite that they should know anything of the elements of surveying, which would often enable them to be useful to themselves and others.

It is hardly necessary for us to say that all over the world surveying means triangulation. If a field, a country, or an ocean can be covered by imaginary triangles, and if the operation is properly carried out, we have the areas. The work is so simple and certain we may assume that the procedure of the Egyptian surveyors could not have differed much from the system that is still in use in many parts of this country. By the aid of optical instruments time and trouble can be saved, but the bases of all maps and plans is the formation of triangles within and without the boundaries of the land which has to be surveyed. This principle is so much of a truism we ought to offer an apology for stating it in a technical journal, but we have met with books which could have been simplified if it had been recognised by the authors at starting.

The English chain which is employed in ordinary surveying contains 100 links, and measures 22 yards, because the statute acre contains 4,840 square yards. But on

surveys for railways and large engineering works, chains with links of 1 foot and measuring 50 or 100 feet are found to be more convenient. The French have no measure that corresponds exactly with our acre. The *are* is equal to 0.0247 acre, the *decare* is equal to ten, and the *hectare* to a hundred *ares*. In round numbers the hectare is about two and a half English acres. The French surveyor's chain has fifty links, with a total length of ten mètres, or about eleven English yards—that is one-half the length of ours. In England the links are made as straight as possible, but in France they are curved, and therefore are likely to be in need of more frequent verification. A ribbon of steel, with copper studs for the divisions, is sometimes used in France, and from its horizontality is in favour, but it is costly and easily broken. The French "fiches" are like the English "arrows," but some are made heavy towards the point, in order that they may fall in a vertical direction when dropped in measuring declivities. For the laying out of right angles the French are more disposed to employ varieties of the plane-table than the English. The geometry of the triangulation is necessarily the same everywhere. There is a good deal of difference between the levels and theodolites of the two countries. The English instruments appear to be more compact in all the parts, and are carried on a more portable tripod.

The methods of plotting, enlarging and reducing plans are practically alike on both sides of the Channel. Thus the "méthode de la piqure" corresponds with the English way of pricking the principal points and uniting the holes by lines; "craticulation" is the old method of squares, and "calque" is copying by means of a plate of glass. The proportional compass is also used. The old-fashioned surveyors were partial to ornate titles, and when the writing was in good style, a title added attractiveness to a plan; but when, as very often happened, there was more ambition than beauty about the lettering, the effect was ridiculous. The Christian Brother who has written the manual on surveying has shown the same good sense in selecting the patterns of his letters that we find in the more scientific parts of his book. They consist mainly of Roman and Egyptian letters, but if well formed they can be effective, and will give a practical character to a plan.

The examples are derived from genuine plans. The working section is of a railway from Rodez to Montpellier, and is evidently after one that was originally plotted in England. It will be found to correspond generally with those which are in use in Westminster offices. There are some differences. Thus, for example, the accumulated horizontal distances are shown, and the advantage is not apparent of writing so many figures when they refer to points which are close. Errors are likely to creep in when large numbers like 24,236.60 have to be placed at distances of about the eighth of an inch. In England the chain points are noted, and the intervening distances are readily scaled. The French levels run to three places of decimals, while in England two are considered ample. Ordinates are drawn in ink at every variation of level, but in a working section it is better to draw them only at the points which mark each chain length, and which on the ground are fixed by a stake. It is also a convenience to have the quantity of cutting or embankment for each chain. Various modifications of the prismoidal formula are given for the calculation of earthwork. In practice tables can be employed, but it is wise to make students understand principles, and it often happens that a quantity has to be ascertained in places where a man has to depend on his mathematical knowledge. The remarkable thing about this and the other books of the Christian Brothers' series, is that although the majority of the students are taken from the humble classes, there is nothing empirical or suggestive of rule of thumb in the pages. The information is of the highest class, and it is not easy to foretell what will be the future of a people who can be educated according to the standard which this book indicates. In England the influence of cliques is probably most felt in respect of school books, for certain publishers, authors, and professors can dictate that such and such books are to be used, and no others, or failure will follow. Otherwise it would be an advantage to many an earnest student if translations of the series were given, but adapted to English requirements. The illustrations in the book are of a superior kind.



**TESSERÆ.****Professional Education.**

JOHN RUSKIN.

IT might be matter of dispute which processes have the greatest effect in developing the intellect, but it can hardly be disputed what facts it is most advisable that a man entering into life should accurately know. I believe, in brief, that he ought to know three things:—First. Where is he? Secondly. Where is he going? Thirdly. What has he best to do under these circumstances? First. Where he is. That is to say, what sort of a world he has got into, how large it is, what kind of creatures live in it, and how? what it is made of, and what may be made of it. Secondly. Where he is going. That is to say, what chances or reports there are of any other world besides this; what seems to be the nature of that other world, and whether, for information respecting it, he had better consult the Bible, Koran, or Council of Trent? Thirdly. What he had best to do under those circumstances. That is to say, what kind of faculties he possesses; what are the present state and wants of mankind; what is his place in society; and what are the readiest means in his power of attaining happiness and diffusing it? The man who knows these things, and who has his will so subdued in learning them that he is ready to do what he knows he ought, I should call educated; and the man who knows them not—uneducated, though he could talk all the tongues of Babel.

**Disproportion in Architecture.**

PROFESSOR COCKERELL, R.A.

If we stand under an arch of London Bridge, the vaulted soffit, so vast and extended, sustained from such distant abutments, produces a kind of sublime; no doubt aided by its comparative lowness. The Pantheon is inscribed in a cube, its height equal to its diameter; no one standing under its prodigious cupola has ever denied its sublimity. But when that same Pantheon is raised into the air (in equal dimension) at St. Peter's, it may have become beautiful, but has lost its quality of sublime. As the dome of the Pantheon is raised at St. Peter's into a proportionate height, at the expense of its sublime, so the nave (nearly twice as wide as that of St. Paul's Cathedral), also raised proportionately, loses all effect of magnitude; and the common and universal observation is that, as respects this important effect, the architect has laboured in vain; and the work stands self-condemned. Had the nave of St. Peter's, 77 feet wide, been 90 feet high only, instead of 145; or if we were to suppose a stage raised mid-height, and place ourselves upon it, we should be sensible of its vast latitude, and the effect of magnitude would have been produced as under a bridge. If, then, the architect can obtain latitude, he should seek to carry out its effect by quadrate and comparatively low proportions; but if he adds altitude to his latitude, he loses his expense and pains, and he may find too late that half his dimension might have attained the same effect: since proportionate magnitude defeats itself. But as extreme latitude gives the sublime, so does its opposite extreme of altitude. In Cologne and Beauvais, the naves of which are three and a half diameters in height, though scarcely more than half the actual width of St. Peter's nave—limited, therefore, in their dimension to the usual cathedral width, yet nearly double the usual proportion—the sublime is completely attained; and disproportion again appears to be the efficient cause. But the optical consideration of the visual angle in which these proportions present themselves is exceedingly important. Thus to the spectator of the dome of the Pantheon, the visual angle is 95 degrees, while the same dome raised into the air at St. Peter's is only 30 degrees. In the nave of St. Peter's the visual angle is 48 degrees, that of St. Paul's Cathedral is 37 degrees, while the vault of Cologne is only 22 degrees. Since, then, the effect of magnitude is measured by the number of degrees in the visual angle, the architect will advert to this consideration as of extreme interest. We come, then, to the important conclusion that the sublime and the beautiful are to be found in the proper adjustment of proportions rather than in dimensions; and we may infer that no increase of scale to the beautiful will ever make it the sublime.

**Flatness in Wall Decoration.**

OWEN JONES.

It is very evident that the treatment of a picture in fresco should be very different to that of a painting in oil. In the painting in oil all the resources of art are invoked to make as far as possible the picture appear a reality. Within his frame the painter has to himself a world, but it should be far different with a fresco; the flatness of the wall should never be disturbed, all chiaro-oscuro should be avoided, and the figures should be on one plane. In fact, a true fresco should be little more than a painted bas-relief. Such were the early frescoes, or more early still, the mosaic paintings.

**The Five Orders.**

SIR M. DIGBY WYATT.

What may be injurious as an inflexible rule of practice may constitute an excellent system of training for the student, and in spite of all the complaints which have been made as to the time wasted by architectural students in what is called "drawing out the Five Orders," I believe that the precise system of learning how to proportion one part of a structure to another which may be gained by such practice is a most valuable exercise, and one tending to assist the ultimate practice of the architect in a very great degree. Rightly followed out, this course of study compels the architect to learn how to make drawings to scale, with plans of every portion and detail of complicated architectural forms, with minuteness and geometrical accuracy, so as to be able to convey to others the knowledge of the way in which from regular cubes any portion of what he may draw may be evolved. He thus familiarises himself with the tangible basis of the geometry of solids, upon which all masonry must depend.

**Classic and Gothic Vaulting.**

PROFESSOR WILLIS.

In vaults of the Roman and Italian styles, of which the groins are without ribs, the vaulting surface is the leading feature, and the disposition of it the only object to be attended to. But in Gothic ribbed vaults, on the contrary, the ribs are the principal features, and the surface of the vaults subordinate. To maintain this subordination of the vaulting surface to the ribs, the latter should branch off from the abacus with the greatest possible appearance of mutual independence as separate arches, an appearance which is better given by single-arc ribs than by double-arc ribs, or semi-fourcentred arches. Also, the vaulting surfaces or panels of contiguous compartments should by no means have the appearance of continuity, which is given by the projection system, but which immediately suggests the idea that the surfaces really constitute the mechanical vault independently of the ribs, which seem to have been subsequently added, and might be removed without destroying the vault, instead of which the ribs really support the vault and should appear to do so in the decorative as well as in the mechanical construction. The apparent mutual independence of the ribs is increased in the best specimens by the manner in which they start from the abacus, some being more prominent than the others.

**Approximate Computation of Areas.**

SIR J. F. W. HERSCHEL.

A very great saving in the expenses of computation in the reduction of local surveys, to give the areas of districts, parishes, estates, and fields, as laid down in maps, has been found to result from the use of planimeters, where indications are sufficient for all practical uses. Tracing with a pen dipped in dilute sulphuric acid on paper of a moderate and uniform thickness, by the aid of transmitted light, and weighing the portion cut out by the corrosive action of the acid on exposure to heat, will enable any one to extemporise a planimeter, following the most intricate details of outline, and giving the total area with a very considerable approximation.

**The Chemistry of Mortar.**

PROFESSOR SULLIVAN.

Cement in its widest sense means any liquid or plastic substance capable of solidifying, by which bodies may be firmly bound together, but it is, perhaps, better to restrict the term to those of mineral origin, in which the lime is employed in the condition of carbonate of lime, or caustic lime. If we burn a piece of limestone or chalk, we deprive it of its carbonic acid, and reduce it to the condition of caustic lime, which, on being moistened with water, will combine and solidify a portion of it, and become slaked or hydrated lime. If this compound be exposed to the atmosphere, it will gradually absorb the carbonic acid, which is always present in minute quantities in the atmosphere, and becomes the same substance, chemically speaking, that it was previous to having undergone the operation of burning. Its form will, however, be completely altered. Instead of being a hard compact mass, it will be quite pulverulent. If, however, it be mixed with a large quantity of sand, and placed as mortar between stones, it will in course of time become quite hard, and bind them together. The cause of this cementation is not well understood; but, so far as we can judge, it is attributable to—(1) The action of the lime upon the sand, by which part of it is converted into silicate of lime, which is insoluble. (2) The crystallisation of part of the caustic lime; and (3) the peculiar force which causes certain substances to abstract from a solution a portion of the solid matter which it may hold dissolved without combining with it, and which even acts to some extent between one solid and another made into a paste with water. This is the same force



which causes dye stuffs, &c., to adhere to tissues. That these forces may produce their full effect, the mortar must gradually dry, and hence, in the presence of water, scarcely any binding action could take place. There are some limestones, however, which, when properly burned, will actually become hard even under water. On this account, they are called hydraulic limes, from their capability of being employed in hydraulic structures. It is quite evident that the cause of the settling of such limes is to a great extent different from that of common mortar. In this case the cause is apparently altogether chemical, for we find on analysing these limestones that they do not consist of pure carbonate of lime, but contain a variable proportion of a material consisting chiefly of silicates of alumina with some potash and soda. When such limestones are burnt, the carbonate of lime which they contain is converted into caustic lime; this reacts upon the silica compounds, and forms a combination that solidifies in water. The more, therefore, of this clay-like substance which exists in a limestone up to a certain point, the more rapidly and perfectly will the resulting lime solidify under water.

#### Peterborough Cathedral.

G. E. STREET, R.A.

There is one façade in England which may be said to be peerless—that of Peterborough. Here, three vast arches, rising the entire height of the fabric, cross the whole west front; the doorways behind them are of the usual modest dimensions, but the charm of this great porch is indescribable. You see the deep shadows of the arches rising high above the surrounding houses as you approach the city from the distance; they are adorned with line upon line of moulding, carried by whole ranges of delicate shafts, and surmounted by gables filled with niches and sculpture, and circular windows of rare beauty, flanked and divided by lofty pinnacles. This may, in truth, be said to be the most poetic conception of the thirteenth century in England; it deserves a pilgrimage from the furthest part of the empire from all those who wish really to grasp the combined power and tenderness of the thirteenth-century art, and lives in the recollections of all who have seen it with eyes capable of appreciating it as among the most lovely of man's creations.

#### Porosity of Stone.

C. H. SMITH.

If the natural texture or disposition of the particles of two or three stones could be conveniently examined upon an extremely magnified scale, no person would imagine that to be the most durable which had scarcely any cement to unite the grains together. It requires no great stretch of philosophical investigation to understand that, whatever the cement may be, that stone which contains the largest quantity of cement in the interstices between the grains will certainly be the least affected by external influences. In a stone that is very open and porous, each component grain on the outside has very nearly all its surfaces exposed to the action of mechanical violence, such as the freezing of water after being forced into or absorbed by the external portions of the stone. The solvent power of water, even in its simplest state, is a fact so notorious that the mere allusion to it seems almost needless. And the atmosphere, especially in England, is always charged with a sufficient quantity of aqueous vapours to engender inevitable decomposition in a stone of a slightly cemented and powdery nature. The chemical action of a humid atmosphere, in conjunction with powerful winds and driving rains, produces a decomposition of the entire surface of limestones, commencing with the particles which have the weakest attachment; whereas the same action, if all other things be equal, will only affect the cementing substance of sandstone, the grains of quartz in it being comparatively indestructible. But in either of these cases, whether chemical or mechanical, the stone that is closest in texture and most crystalline will also be least porous, consequently it will present the largest portion of matter in a given space to resist decomposition. But, like the fable of the "bundle of sticks," the more the grains are separated from each other the more readily will the whole be destroyed. A stone may be very porous, consequently very absorbent, and yet sufficiently durable for architectural purposes. Its durability depends upon the cement being strong enough to resist the mechanical forces to which I have alluded. By this statement I do not mean to infer that absorption is a desired quality; a stone may be comparatively like a sponge and yet last for ages without any mineral decomposition; but if two kinds of stone were equal in every other respect, that which will soak up least water will certainly be the most durable. Few mineral substances will hold more water than a good graystock brick, which will probably last as long as any stone, because its component parts are held together by a strong vitreous cement; but a clinker brick is less absorbent, because it contains a greater quantity of the same kind of cement, and is therefore less likely to yield to the atmospheric influences.

#### THE PETERBOROUGH CATHEDRAL SQUABBLE.

A LETTER from Sir Edmund Beckett, as the nominee of the Dean of Peterborough, has been printed in the *Times*. It relates to the dispute about the grounds on which subscriptions have been obtained for the restoration of the Cathedral. On November 13 "the Chapter consented to call a meeting to consider Mr. Pearson's several designs." It soon became apparent, says Sir Edmund Beckett, that Canon Argles and his party were in a small minority, and so he objected that the meeting was too small, and he and his party would not vote, but eight did vote against him. Then came our meeting where there was to be no voting, but the two objecting canons had really nothing to say except that they did object. Then there was another committee meeting called, which was much too large for him to call small, and the majority was exactly three to one, as I explained. Thereupon, he comes out with what he is pleased to call an "eirenicon," which is the established clerical phrase for a device to get your own way while appearing to give way.

That splendid effort deserves a paragraph of its own, and I should think will satisfy everybody of his competence to be the arbiter over everybody as to the proper mode of restoring a cathedral. On December 22 the Chapter "resolved, in reply to the resolution of the committee of the 17th, that they beg to say that the tower may be raised with their assent by the insertion in the contract of the single stage of the Norman arcading, as recommended by the committee" (as the only pressing question yet), "provided the funds are forthcoming, and that the pointed arches east and west as before be proceeded with."

Just conceive three men who happen to have the legal power over a cathedral overriding 20,000*l.* worth of subscribers with such a resolution as that, in order to stick in two good-for-nothing pointed arches, with everything else Norman above and below and all around them—for it is the most completely Norman interior in all England—and they have not one word to say for it except they that they were there before. And why? The answer to that is another curious fact in the case. The very able clerk of the works there, who had restored several cathedrals under Scott, has discovered proofs, which nobody disputes, that those two intruding arches were nothing but an *ex post facto* makeshift of the fourteenth-century builders, who had first tried to erect a light and low lantern storey on the top of all four Norman arches, and then found that the east and west ones were so much worse than the others that they would not bear any lantern, and so they had to pull it all down again and put in those arches, which are, of course, stronger and lighter than round ones; besides that the old builders always built in their own style. Canon Argles and his two satellites are determined to deface the Cathedral for ever with those monstrosities now to be interpolated in the midst of Norman work, which they never were before. His polemic of prohibiting any Norman restoration except where actual Norman remained was ridiculous enough, but his eirenicon is still more absurd.

I will not write a word of architectural argument at present, though I need not say that I have plenty to say on that point. The present is the moral question—whether a committee which the Chapter constituted to give confidence to the subscribers is to be overridden by such lunacy as this. The faculty committee at St. Albans had absolute power, and everybody who subscribed knew it; and yet when the minority thereof desired to appeal to the subscribers we allowed them, and had the satisfaction of beating them there still more, and then the minority in the committee sank to two, who thereupon discreetly abdicated. There the question was the same, viz., whether to rebuild the late and bad Gothic work or the early and good. Mr. Ferguson truly says in this month's *Nineteenth Century* that probably no one now wishes it to have been done otherwise. So it will be at Peterborough. When these obstructives have been beaten, as they must be, Peterborough Cathedral, with very nearly the longest nave in England, and one of the four or five widest towers, will again have it of the proper height, with the *tres historiae* recorded of the old one, though the style of the top storey, the rebuilt Decorated one, will be later than of the lower storeys, as it is at York and Lincoln, and Durham and Salisbury, and more or less in some others.

The Chapter wants ever so much more for general repairs. How much do these three canons expect anybody to trust them with hereafter if they defy everybody who finds it and their own architect, without having a word of reason to give for it?

**Notes and Comments.**—Owing to the number and length of the original articles, we have been compelled to omit "Notes and Comments" for this week.

**Mr. Roger Rowe**, of Farnworth, has lately laid down his improved wood block flooring in many public and private buildings.









THE BARD.  
*Phemius' Chanting in the House of Ulysses.*  
*From the painting by Jean-F. H. Maitland.*

D. MAILLART

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## ILLUSTRATIONS.

PHEMIUS CHANTING IN THE HOUSE OF ULYSSES.

IN the "Odyssey" there are two or three references to the minstrel PHEMIUS, who has been introduced so prominently in M. MAILLART'S picture, and gives it a title. That poem, it will be remembered, opens with a council of the gods. PALLAS ATHENE, or MINERVA, implored ZEUS to take compassion on ULYSSES, who at the time was in thrall to CALYPSO on the island of Ogygia :—

Ulysses, happy might he but behold  
The smoke ascending from his native land  
Death covets.

The easy-going ZEUS was persuaded to relent. MINERVA then resolved to visit Ithaca, in order to inspire TELEMACHUS with a desire to seek his father. On entering the house of ULYSSES, the goddess found TELEMACHUS in a desponding mood, seated amidst the crowd of suitors for the hand of his mother, who was supposed to be a widow. The book of the good Bishop of CAMBRAI has, in English schools at least, made boys believe that the prince was one of those model youths who have little of the heroic about them, and, in consequence, there is a prejudice against him in men's minds. Like CALYPSO, we are astonished at so much wisdom and eloquence in youth. But the Homeric TELEMACHUS is a true Greek in courage, subtlety, and desire to have revenge on his enemies. He knew that the suitors who were every day wasting his father's substance would, if they had the chance, deprive him of his possessions and his life. It was natural for the son of ULYSSES that he should wish to remove them. He felt, however, that one so young was helpless; but as he sat his thoughts sometimes turned towards the storm-tossed wanderer against whom the gods conspired—

Bright picturing in his mind, how, home again,  
His sire would put to flight the wassail train,  
Resume his honours, and ancestral right.

While TELEMACHUS was thus musing, the goddess appeared in the guise of MENTES, a leader of the Taphians, and stood outside the door. The prince at once invited the stranger to enter, and, out of respect, was placed in a position that was a little remote from the suitors. A feast followed of the Homeric kind, in which one reads of golden bowls and wheaten bread, coarse viands and honey-sweet wine. When the meal was ended, the suitors who did as they liked in the house demanded music. Accordingly a lyre was put into the hands of PHEMIUS, who was the bard of the family, the poet laureate of Ithaca. He must have known that his auditors were the enemies of his lord, and accordingly it has been supposed that he complied under compulsion. But old CHAPMAN, whose insight is worth another man's scholarship, in translating the passage, says :—

The herald straight  
A harp, carved full of artificial sleight,  
Thrust into Phœmius', a learned singer's, hand,  
Who, till he was much urged, on terms did stand;  
But, after, played and sung with all his art.

The hesitation of the minstrel was probably not unlike the fears which are expressed by young ladies who are asked to sing at Christmas parties, and which in reality are expressions of a wish to be pressed. That PHEMIUS was culpable in performing for the gratification of the suitors, is seen by his terror when the time came for ULYSSES to avenge himself. He selected one of those mournful subjects which are doubly affecting to men who, having drank freely, can enjoy the luxury of woe. PHEMIUS related the story of the sufferings of the Achæians on their retreat from Troy. It was on those occasions that the Greek felt the nearest approach to home life, and it is no wonder that the houseless ULYSSES should be moved to tears when an opportunity was given to him to see numbers of people united under one roof, at a time when hospitality was exalted by poetry and music :—

The world in my account no sight affords  
More gratifying than a people blest  
With cheerfulness and peace, a palace thronged  
With guests in order seated, and regaled  
With harp and song, while plenteous viands steam  
On every table, and the cups, with wine  
From brimming beakers fill'd, pass brisk around.  
No lovelier sight I know.

The song of PHEMIUS, which gave pleasure to the suitors, was heard by PENELOPE in her upper chamber, and had a different effect on her mind. The princess, accompanied by two handmaids, descended to the hall, and standing by the door implored the minstrel to stop or change his strain. It suggests the courteous attention to guests which then prevailed when we find that PENELOPE'S anxiety was not entirely on her own account, and there must have been strong reasons for acting in a way that was so contrary to custom. TELEMACHUS remonstrated with his mother, on the ground that poetry was a revelation of the gods and should accordingly be respected :—

Leave to the bard free mastery of his mind;  
'Tis not the minstrel, 'tis the will of Jove  
That breathes the inspiration from above.  
Then blame not Phœmius, whose recording lay  
Mourns their sad fate who steer'd from Troy their way.

Then asserting his authority as head of the household, TELEMACHUS directed PENELOPE to return to her upper chamber. Such is an outline of what is told about the chanting of PHEMIUS in the "Odyssey." After ULYSSES has slain the suitors the minstrel clasps his knees and implores mercy, and is saved on the intercession of TELEMACHUS.

A figure of PENELOPE, taken from a picture by M. LECOMTE DU NOUY, which was published in *The Architect* in 1882, represents the princess, enveloped in her shining veil, holding a portrait of ULYSSES and a little bow that is suggestive of the death-dealing weapon. The figure is mysterious. She, too, had a Greek's craft, and her diplomacy in beguiling the suitors for four years with promises and presents was almost worthy of her husband. There was also the ruse of weaving a winding sheet, which should be in readiness for her father-in-law, the old LAERTES, a piece of work which, as it was unravelled by night, could never be accomplished. It was with more or less reason that the suitors declared that they were not entirely guilty for all the extravagance which their presence entailed.

The PENELOPE of M. MAILLART is conceived in a different spirit from that which we have already published. It will be seen that the artist does not attempt to render HOMER'S description with literal accuracy. M. MAILLART reads HOMER for inspiration, and prefers to paint something which may have occurred rather than to illustrate a particular passage. Instead of standing against the doorpost with her face veiled from observation, PENELOPE is shown seated, and being strong is not quite overcome by the lay of PHEMIUS. She is attended by an old woman and a young girl. HOMER simply says there were two handmaids. By making one of them aged, M. MAILLART suggests the presence of the ancient nurse EURYCLEIA, who recognised ULYSSES when she saw the scar on his leg as she was bathing his feet. In this way the story is helped, as it is also by the introduction of a loom behind PENELOPE. Another ingenious interpretation is the figure of the bard, which recalls the ancient busts of HOMER himself. There is nothing said in the "Odyssey" about the personal appearance of PHEMIUS, and Herr PRELLER, whose fresco was illustrated in *The Architect* some years ago, might claim to be correct when he represented him as a comparatively young man. But beyond the poem there is a legend, according to which PHEMIUS was one of HOMER'S friends, and may have been his master. As we always associate age with HOMER, it is natural to suppose that his fellow rhapsodists were no longer young. There is another circumstance which is in favour of M. MAILLART'S theory. A second bard is described in the "Odyssey." This is DEMODOCUS, who is said to have been loved by the Muses, but is blind. He is supposed to have been an image of HOMER himself. M. MAILLART has evidently thought over the allusions, and has concluded that he would be justified in giving PHEMIUS some of the characteristics with which the HOMER of Greek sculpture has been endowed. The vigorous figure which he has designed is such a bard as the imagination suggests when reading HOMER or even one of the northern sagas, and there is infinitely more pleasure in contemplating him in his fine frenzy than observing the craven who has been depicted by FREDERICK PRELLER. There is no suggestion of suitors in the picture, and TELEMACHUS is apparently moved by thoughts which are in accord with those of his mother.



There is consequently a departure from the poem, or rather there is an addition to it. HOMER does not describe the scene, but it is reasonable to suppose that on one occasion PENELOPE did listen to a part of that wondrous Tale of Troy which was destined to have so much influence on human life; and while her son and his friend were excited to pity and revenge by the sufferings of ULYSSES, the thoughts of the old nurse were carried back to the time when the man whose career had become legendary was a baby at her breast. For once the revelry of the suitors was not heard, and the girl who sits so demurely at the side of her mistress, and those who are behind the chair, can have no suspicion of that day of wrath which was fast approaching, and of the black beam with the row of nooses which was to be fatal to so many young lives in the house. M. MAILLART represents a peaceful interlude in a great tragedy, which is preceded and followed by death.

According to the old academic rule there are three elements in a picture, namely, invention, drawing, and colour. The illustration will suggest M. MAILLART'S power in designing and drawing the figure. The principal figure is that of PENELOPE, which is prominent without being obtrusive. In contrast with the princess are a young girl and a much older woman, and opposite is the old minstrel. The curved lines are contrasted with the vertical lines of columns, spears, loom, &c., and there is also the contrast between the vigorous standing figure of TELEMACHUS and those which are seated. The principal group may be comprised within lines which form a pyramid, and yet they are without any suggestion of stiffness. There are many other points which are suggestive of established principles of art, but it is unnecessary to point them out.

#### ASKHAM HALL, NEAR YORK.

THIS mansion, the country seat of Sir ANDREW FAIRBAIRN, M.P., is being built on a site at present occupied by an old hall, the rooms of which are inconveniently low, and the kitchen and other offices insufficient. The park in which the building stands is a finely-timbered one, with historic interest, as forming a part of the battlefield of Marston Moor. Standing isolated as it does, the hall had to have its independent system of drainage and water supply; the former being treated by precipitation, the effluent being discharged into the fish pond. The latter is obtained from a well, the water being pumped by a hot air-engine into a tank at the top of the tower, and from thence distributed by gravitation to where required. In order to obtain work of first-class character much of the material has to be brought from a distance, the stone for example coming from Bradford, and the facing bricks from Leeds. The architects are MESSRS. CHORLEY & CONNOR, of Leeds, and all the contractors hail from the same place; the bricklaying, mason, and plasterers' work being by MESSRS. FRANKS & EVANS; the joiners' work by Mr. J. HULL THORP; the plumbing by Mr. J. LINDLEY; the tiling by MESSRS. WATSON, WORSNOP & CO.; and the ironwork by MESSRS. NELSON & SONS.

#### THOMAS GAINSBOROUGH.

IN the opening number for last year we published a character of Sir Joshua Reynolds by his friend, William Jackson, of Exeter. As an exhibition of Gainsborough's works has been opened at the Grosvenor Gallery, we now give the companion sketch by Jackson, which is the basis of all the modern biographies of the painter:—

In the early part of my life I became acquainted with Thomas Gainsborough, the painter; and as his character was, perhaps, better known to me than to any other person, I will endeavour to divest myself of every partiality, and speak of him as he really was. I am the rather induced to this, by seeing accounts of him and his works given by people who were unacquainted with either, and consequently have been mistaken in both. Gainsborough's profession was painting, and music was his amusement—yet there were times when music seemed to be his employment and painting his diversion. He frittered away his musical talents; and though possessed of ear, taste, and genius, he never had application enough to learn his notes. He scorned to take the first step, the second was of course out of his reach, and the summit became unattainable.

As a painter his abilities may be considered in three

different departments—portrait, landscape, and groups of figures, to which must be added his drawings. To take these in the above-mentioned order.

The first consideration in a portrait, especially to the purchaser, is that it be a perfect likeness of the sitter—in this respect his skill was unrivalled. The next point is, that it is a good picture—here he has as often failed as succeeded. He failed by affecting a thin, washy colouring, and a hatching style of pencilling; but when, from accident or choice, he painted in the manly substantial style of Vandyke, he was very little, if at all, his inferior. It shows a great defect in judgment to be from choice wrong, when we know what is right. Perhaps his best portrait is that known among the painters by the name of the *Blue Boy*; it was in the possession of Mr. Buttall, near Newport Market.

There are three different eras in his landscapes—his first manner was an imitation of Ruysdael, with more various colouring; the second was an extravagant looseness of pencilling, which, though reprehensible, none but a great master can possess; his third manner was a solid, firm style of touch.

At this last period he possessed his greatest powers, and was (what every painter is at some time or other) fond of varnish. This produced the usual effects—improved the picture for two or three months; then ruined it for ever! With all his excellence in this branch of the art, he was a great mannerist; but the worst of his pictures have a value, from the facility of execution, which excellence I shall again mention.

His groups of figures are, for the most part, very pleasing, though unnatural; for a town-girl, with her clothes in rags, is not a ragged country-girl. Notwithstanding this remark, there are numberless instances of his groups at the door of a cottage, or by a fire in a wood, &c., that are so pleasing as to disarm criticism. He sometimes (like Murillo) gave interest to a single figure—his *Shepherd's Boy*, *Woodman*, *Girl and Pigs* are equal to the best pictures on such subjects; his *Fighting Dogs*, *Girl warning Herself*, and some others, show his great powers in this style of painting. The very distinguished rank the *Girl and Pigs* held at Mr. Calonne's sale, in company with some of the best pictures of the best masters, will fully justify a commendation which might else seem extravagant.

If I were to rest his reputation upon one point, it should be on his drawings. No man ever possessed methods so various in producing effect and all excellent—his washy, hatching style was here in its proper element. The subject which is scarce enough for a picture is sufficient for a drawing; and the hasty, loose handling which, in painting, is poor, is rich in a transparent wash of bistre and Indian ink. Perhaps the quickest effects ever produced were in some of his drawings—and this leads me to take up again his facility of execution.

Many of his pictures have no other merit than this facility; and yet, having it, are undoubtedly valuable. His drawings almost rest on this quality alone for their value; but possessing it in an eminent degree (and as no drawing can have any merit where it is wanting) his works, therefore, in this branch of the art, approach nearer to perfection than his paintings. If the term facility explain not itself, instead of a definition I will illustrate it.

Should a performer of middling execution on the violin contrive to get through his piece, the most that can be said is that he has not failed in his attempt. Should Cramer perform the same music, it would be so much within his powers that it would be executed with ease. Now, the superiority of pleasure which arises from the execution of a Cramer is enjoyed from the facility of a Gainsborough. A poor piece performed by one, or a poor subject taken by the other, give more pleasure by the manner in which they are treated than a good piece of music and a sublime subject in the hands of artists that have not the means by which effects are produced in subjection to them. To a good painter or musician this illustration was needless; and yet by them only, perhaps, it will be felt and understood.

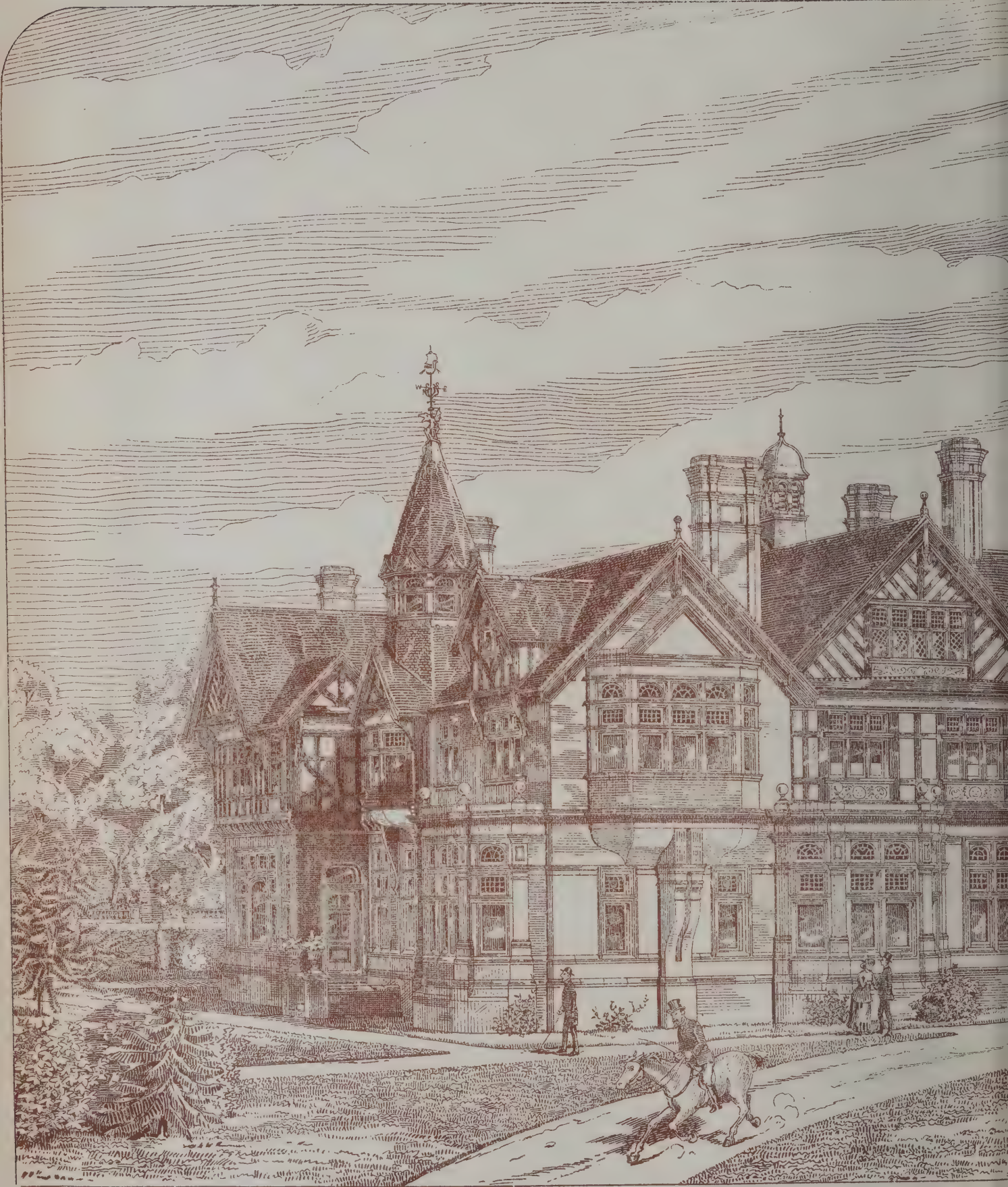
By way of addition to this sketch of Gainsborough, let me mention a few miscellaneous particulars. He had no relish for historical painting; he never sold, but always gave away his drawings, commonly to persons who were perfectly ignorant of their value. He presented twenty drawings to a lady, who pasted them to the wainscot of her dressing-room. Some time after she left the house; the drawings, of course, become the temporary property of every tenant. He hated the harpsichord and the pianoforte. He disliked singing, particularly in parts. He detested reading, but was so like Sterne in his letters that, if it were not for an originality that could be copied from no one, it might be supposed that he had formed his style upon a close imitation of that author. He had as much pleasure in looking at a violin as in hearing it. I have seen him for many minutes surveying, in silence, the perfections of an instrument, from the just proportion of the model and beauty of the workmanship.

His conversation was sprightly, but licentious; his favourite subjects were music and painting, which he treated in a manner peculiarly his own. The common topics for any of a superior









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3<sup>rd</sup> 1885



NEAR YORK,

BAIRN, M.P.

ARCHITECTS







cast, he thoroughly hated and always interrupted by some stroke of wit or humour.

The indiscriminate admirers of my late friend will consider this sketch of his character as far beneath his merit; but it must be remembered that my wish was not to make it perfect, but just. The same principle obliges me to add that as to his common acquaintance he was sprightly and agreeable, so to his intimate friends he was sincere and honest, and that his heart was always alive to every feeling of honour and generosity.

He died with this expression, "We are all going to heaven, and Vandyke is of the party"—strongly expressive of a good heart, a quiet conscience, and a love for his profession which only left him with his life.

### THE LONDON GOLDSMITHS.

THE Goldsmiths' Company can trace their history to 1180. A statute was granted by Edward I. in 1300. The earliest charter of the Company dates from 1327. It states that it had been theretofore ordained that all those who were of the goldsmiths' trade should sit in their shops in the High Street of Cheap (Cheapside), and that no silver or plate, nor vessel of gold or silver, ought to be sold in the City of London, except at the King's Exchange, or in the said Street of Cheap amongst the goldsmiths, and that publicly, to the end the persons of the said trade might inform themselves whether the sellers came lawfully by such vessel or not; whereas of late not only the merchants and strangers brought counterfeit sterling into the realm, and also many of the trade of goldsmiths kept shops in obscure turnings and by-lanes and streets, but did buy vessels of gold and silver secretly, without inquiring whether such vessel were stolen or lawfully come by, and immediately melting it down, did make it into plate and sell it to merchants travelling beyond seas, that it might be exported; and so they made false work of gold and silver, which they sold to those who had no skill in such things, which abuses and deceptions this charter provides against, by ordaining that no gold or silver shall be manufactured to be sent abroad but what shall be sold at the King's Exchange, or openly amongst the goldsmiths, and that none pretending to be goldsmiths shall keep any shops but in Cheap.

For the purpose of the assay, the goldsmiths had an assay office in the early part of the fourteenth century. The statute of 28 Edward I. enacts that no vessel of gold or silver shall depart out of the hands of the workman until it is assayed by the wardens of the craft, and stamped with the leopard's head, the leopard being at that time part of the royal arms of England.

The London goldsmiths were divided into two classes—natives and foreigners. There were the members of the company and the "allowes," or allowed or licensed. The latter comprised "Allowes Engles," "Allowes Alicant," "Alicant Strangers," "Dutchmen," "Men of the Fraternity of St. Loys," &c. The best artists were probably foreigners. In 1445 thirty-four strangers were sworn and paid 2s. a head. In 1447 Charles Spaen paid 8*l.* 6*s.* 8*d.* to the alms of St. Dunstan to be admitted a freeman, and in 1511 John de Loren paid 20*l.* for the same object.

### DECORATION OF THE DOME OF ST. PAUL'S

A LETTER from Mr. John R. Clayton, on the subject of the Decoration of St. Paul's, has appeared in the *Times*. He says:—"An Artist," writing in the *Times* on the 15th inst. on the Decoration of the Dome of St. Paul's, ventures, in reference to the design for that work by the late Alfred Stevens, to make statements which may reasonably be replied to by another of the craft. Your correspondent tells us that "The committee appointed by the Dean and Chapter ruled, from the first, that the decoration should be founded on the preposterous design by the late Alfred Stevens."

As a matter of fact, within my personal knowledge, the existence of Stevens's design, an undeclared labour of love on his part, was unknown to the committee till the circumstance of his sudden death placed it unexpectedly at their disposal. This design, complacently stigmatised as "preposterous" by your correspondent on his anonymous authority, is one to which Sir Frederick Leighton and Mr. E. J. Poynter, R.A., have significantly pledged their concurrence by rendering aid in its execution. For the profitable reflection of your nameless correspondent I may quote the opinions publicly made by Mr. Poynter on the subject. He has said, "No one is more ready than I am to recognise the superiority of Stevens's genius, and the grandeur, simplicity, and unity of effect in his great invention; or to regret that it cannot be carried out by him in his own way." Further, he speaks of certain groups in the design as being "incomparably the finest things, to my mind, that have been done in this century."

By descending from the general to the particular your

correspondent justifies a doubt as to whether he has seen Stevens's design at all. He says, "It degrades the noble dome into the mere lid of a box"—whatever that may mean—and speaks of the dome as being "cut into slices which are again divided into cameos, odd-shaped little panels, and sham ribs." The "little" panels are mostly of extremely large dimensions, their "odd shapes" are perfect circles, and "ribs" have in Stevens's design no existence.

It is unnecessary further to comment on your correspondent's statements. In conclusion, I will trespass on your space only to express my regret that the committee have excluded from the task delegated to Sir Frederick Leighton and Mr. Poynter the magnificent groups to which the latter has alluded in terms of deserved eulogy. Stevens's conception would be far less the consummate thing it is were it possible to deduct from it this or that ingredient of design without ruin to the whole.

To the groups referred to was due mainly its pervading air of grandeur. Their admirable colour-effect in flesh-tones, like tinted sculpture at recurring distances, is in the general effect both of form and colour an element of simplicity and repose such as cannot be omitted without calamity. These groups are, it seems, objected to because they are nude, although their nudity is simply that of architectonic figures, without any story or suggestiveness of any kind. They fulfil the office of bearers or "telamones," and are like all that Stevens did, as pure in motive as anything that left the hand of John Flaxman or Beato Angelico. To mutilate Stevens's design because of these figures, upon which so much of its masterly character rests, is wholly incomprehensible.

Nudity in some form has been common to all periods of Christian art. In our family picture Bibles, in illustrations to Milton, in painting and sculpture dealing with the history of our first parents, the scenes of the Inferno, and the closing incidents of the Gospel narrative, the admission of the nude has been as familiar as it has been harmless. In St. Paul's itself we find the partial nude in the monumental representation of Dr. Samuel Johnson, and in the sculpture referring to the naval commander Richard Rundle Burgess we see that hero dying stark naked in the arms of Victory. If the course adopted in the exclusion of Stevens's groups is justified, then is the plea utterly delusive that would credit our picture and sculpture galleries with educational and refining influences, in virtue of which large sums of public money are annually granted. It is difficult to comprehend how that which is civilising and refining at Trafalgar Square and South Kensington can be pernicious at St. Paul's.

### WESTMINSTER HALL.

THE following is Mr. William White's opinion of the designs by Mr. Pearson:—

Our requirements may be different from those of the thirteenth and fourteenth centuries, our views of art may be more correct, but nothing will justify a disregard for the historical architecture of such a building as this. The proposal to raise the walls five or six feet for the sake of light is a case in point. It is difficult to understand how such a proposition should emanate from one who at the same time professes the greatest admiration for the interior proportions of the hall, which would be thereby entirely changed. The proportion of height to breadth would then become approximately as three to four, instead of two to three as at present. This would be to the detriment of its apparent spaciousness and to the loss of repose, the absence of which is felt to be so common in modern work. As to the floor, again, we are told that "Sir Robert Smirke did not raise, but, on the contrary, lowered the level of the hall five or six feet down to the original foundation of Purbeck stone." Mr. Butterfield more accurately, quoting from the "Archæologia," clearly shows that it was lowered but 16 inches to the original floor of Richard II. Some of the details under discussion may be of an insignificant nature, and yet are of sufficient importance to distract attention from the merits of the whole case, mixed up as they are with professional as well as non-professional inaccuracies and false conclusions. The proposed introduction of lofty dormers for lighting the roof will no doubt approve itself to some. But its massive grandeur would be destroyed by the introduction of light for displaying its detail. The interior effect of a great national monument of historical antiquity would be sacrificed.

The exterior treatment is a more serious matter. The roof has been called ugly, heavy, barbarous. It is said that it was never meant to be seen from the western side. But its want of beauty and dignity arises wholly from the mutilation and destruction of the substructure. Its embattled parapets have been removed, together with the two-storeyed building which extended the whole length of the Hall, between the buttresses, with its two-light windows and a subordinated embattled parapet, forming an emphatic and picturesque support to a noble roof.



A careful inspection of Mr. Pearson's designs will show any one the conservative spirit and the admirable manner in which he has reproduced these features. The evidences of their former existence have been perfectly traced out, and they are requisite for its proper effect and correct finish, whether this western side is to be permanently exposed or not. If it be absolutely necessary for the public service that this side of the adjoining street should be occupied with public offices, there is nothing more to be said. But the use to which Westminster Hall and its surroundings may be eventually put is of very small moment as compared with the general principles which ought to be followed in its "restoration," if this term must be employed. There is absolutely nothing to show that in the time of Richard II. there were any buildings on this side excepting the transeptal one at the north end and that between the buttresses already referred to. As to the Hall being a disfigurement by the new Houses of Parliament, there need be no fear but what it will hold its own by their side when properly reinstated.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### SIR WALTER SCOTT ON HISTORICAL PAINTING.

IN 1811 Edward Bird, who was afterwards a Royal Academician, proposed to paint a picture illustrative of the scene described in the ballad of "Chevy Chase," when the widows came after the battle. Before that time Bird had confined himself to domestic subjects, and he was uncertain about the costumes and other details for an historical picture. In order to obtain the information, a friend wrote to the author of the "Border Minstrelsy" and "The Lay of the Last Minstrel." Scott, with his customary good nature, wrote the following letter:—

Sir,—I am favoured with your letter, and without pretending to touch upon the complimentary part of it, I can only assure you that I am much flattered by your thinking it worth while to appeal to me on a point of national antiquities. I am very partial to "Chevy Chase," although perhaps "Otterbourne" might have afforded a more varied subject for the pencil. But the imagination of the artist being once deeply impressed with a favourite idea, he will be certain to make more of it than of any other that can be suggested to him. In attempting to answer your queries, I hope you will allow for the difficulty in describing what can only be accurately expressed by drawing, &c. I shall at least have one good thick cloak under which to shelter my ignorance.

I greatly doubt the propriety of mourning cloaks; but a group of friars might with great propriety be introduced, and their garb would have almost the same effect. I am not aware there was any difference between the defensive armour of the Scots and English, at least as worn by the knights and men-at-arms; yet it would seem that the English armour was more gorgeous and showy. They had crests upon their helmets before they were used in Scotland, and at the battle of Pinkie, Patten expresses his surprise at the plainness of the Scottish nobility's armour. I conceive something like this may be gained by looking at Grose's ancient armour, and selecting the more elaborate forms for the English—the plate-armour for example—while the Scots might be supposed to have longer retained the ring or mail-armour. There should not be a strict discrimination in this respect, but only the painter may have this circumstance in his recollection. There are at Newbattle two very old pictures on wood, said to be heroes of the Douglas family, and one of them averred to be Chief of Otterbourne. The dress is very singular—a sort of loose buff jerkin, with sleeves enveloping the whole person up to the throat, very curiously slashed and pinked, and covering apparently a coat of mail. The figure has his hand on his dagger, a black bonnet with a feather on his head, a very commanding cast of features, and a beard of great length. The pictures certainly are extremely ancient and belong to the Douglas family.

Query 2. The knights and men-at-arms on each side wore the sword and lance, but the English infantry were armed with bows, the Scots with long spears, mallets, and two-handed swords. Battle-axes of various forms were in great use among the Scots. The English also retained the brownbill, so formidable at the battle of Hastings, a weapon very picturesque, because affording a great variety of forms, for which, as well as for the defensive armour worn by the infantry of the period, see Grose and the prints to Johnes's "Froissart."

Query 3. Those of the followers of Douglas that are knights and men-at-arms may have their helmets at the saddle-bow, or borne by their pages—in no case in their hands. The infantry may wear their steel caps, or morions; the target or buckler of

the archers, when not in use, was slung at their back, like those of the Highlanders in 1745. I am not aware there was any particular mode of carrying their arms at funerals, but they would naturally point them downward with an air of depression.

Query 4. The plaid never was in use amongst the Borderers, i.e. the Highland or tartan plaid. But there was, and is still used, a plaid with a very small check of black and grey, which we call a *maud*, and which I believe was very ancient. It is the constant dress of a shepherd, worn over one shoulder, then drawn round the person, leaving one arm free.

Query 5. In peace the nobility and gentry wore cloaks or robes richly furred, over their close doublets. The inferior ranks seem to have worn the doublet only. Look at Johnes's "Froissart," which I think you may also consult for the fashion of Lady Percy's garments. Stothard some years ago painted a picture of Chaucer's Pilgrims, which displayed much knowledge of costume.

Query 6. I am not aware there was any prevailing colour among the peasantry of each nation. The sylvan green will of course predominate among Percy's bowmen.

Query 7. The bonnet, the shape of that of Henry VIII. (but of various colours), was the universal covering in this age. The following points of costume occur in my recollection of a Border ballad (modern, but in which most particulars are taken from tradition).

Scott of Harden, an ancient marauding Borderer, is described thus:—

His cloak was of the forest green,  
Wi' buttons like the moon;  
His trews were of the gude buckskin,  
Wi' a' the hair aboon.

The goat-skin or deer-skin pantaloons, with the hair outermost, would equip one wild figure well enough, who might be supposed a Border outlaw. You are quite right respecting the badges, but besides those of their masters, the soldiers usually wore St. George's or St. Andrew's cross, red and white, as national badges. The dogs of the chase, huge dun greyhounds, might with propriety, and I think good effect, be introduced. Suppose one mourning over his master, and licking his face. A slaughtered deer or two might also appear, to mark the history of the fight and the cause of quarrel.

I have often thought a fine subject for a Border painting occurs in the old ballad called the "Raid of the Reidswire," where the wardens on either side having met on a day of truce, their armed followers and the various tribes mingled in a friendly manner on each side, till, after some accidental dispute, words grew high between the wardens. Mutual insult followed. The English chief, addressing the Scottish—

Rose and raxed him where he stood,  
And bid him match him with his marrows.  
Then Tynedale heard them reason rude,  
And they let fly a flight of arrows.

The two angry chieftains, especially Forster, drawing himself up in his pride and scorn, would make a good group, backed by the Tynedale men, bending and drawing their bows. On the sides you might have a group busied on their game, whom the alarm had not yet reached; another half disturbed; another where they were mounting their horses and taking to their weapons, with the wild character peculiar to the country.

This is, sir, all, and I think more than you bargained for. I would strongly recommend to your friend, should he wish to continue such subjects, to visit the armouries in the Tower of London, where there are various ancient, picturesque, and curious weapons, and to fill his sketch-book with them for future use. I shall be happy to hear that these hints have been of the least use or service to him, or to explain myself where I have been obscure.

And I am, sir, your very humble servant,  
Edinburgh, December 8, 1811. WALTER SCOTT.

P.S.—If Douglas's face is shown, the artist should not forget the leading features of his family, which were an open high forehead, a long face, with a very dark complexion.

### THE EGLINTON TOURNAMENT.

THE recent death of the Duchess of Somerset cannot fail to recall the tournament at Eglinton Castle, where her Grace (who was then Lady Seymour) presided as Queen of Beauty. The pageant, like the revival of Gothic architecture, was among the fruits of the Waverley novels and the poetry of Scott. The tournament was held on August 28 and 29, 1839. According to the account of Sir Thomas Dick Lauder the lists were placed in a low-level plain. A strong wooden defence, consisting of palisades 5 feet high, well boarded, enclosed an oblong space of level ground of about three acres in extent—its length being 650 feet, and its breadth 250 feet. The tilting barrier ran longitudinally down the



middle portion of the centre; it was also of wood, and its length was about 300 feet and its height about  $4\frac{1}{2}$  feet. On the eastern, or rather the southern, side were erected three ample wooden galleries; those to the right and left were uncovered, whilst that in the centre, which was called the gallery of the Queen of Beauty, was roofed with planks. A beautiful *loge* projected from the front of it, towards the lists, which was destined for the Queen of Beauty herself, and which was capable of holding thirty or more persons. The gallery to which it was attached was seated for above 800 people, and those to the right and left of it for about 600 each. The galleries were divided by lancet-shaped Gothic arches, richly painted and decorated in scarlet, crimson, and gold. The interior of the principal one was also painted—the seats were covered with crimson cloth—and the back wall was ornamented with a gorgeous antique sort of velvet-looking stuff. The seats rose one behind the other backwards; and as the roof also rose from over the back or uppermost seat forwards, it nowhere interrupted the view from within, whilst the front completely concealed it when the building was looked at from that direction. The Queen's *loge* was fitted up with silken curtains, and draperies of crimson damask. The pavilions of the knights were extremely gay, and fashioned with the greatest possible attention to the descriptions and illuminations in the chronicle. They were shaped with angular sides and roofs, from which projected the quaint-looking mock windows, which were always to be seen in pavilions, and over each of which there was placed a stiff banner, of such a nature as to make the bearings with which it was charged always visible.

When the Queen of Beauty was enthroned the knights and esquires were summoned to pay their devoirs, after which they received from their ladies the favours which were to be worn during the tourney. The knights then returned to their pavilions to complete their arming. After being assisted to their chargers by their esquires, the combatants took their stations on the ground appointed to them, when, the trumpets having again sounded, the herald gave notice that they were ready to do their devoir against any knight who might demand the combat. On this the knight elected to run the first course against the challengers left his tent, armed at all points, and riding up to the gallery, demanded permission to make his essay, which was granted. At the cry of *Laissez les aller*, the trumpets sounded the charge, and the knights ran the appointed courses.

The following were the rules which were prescribed to be observed in the tilting lists:—1. No knight can be permitted to ride without having on the whole of his tilting-pieces. 2. No knight to ride more than six courses with the same opponent. 3. It is expressly enjoined by the Earl of Eglinton, and must be distinctly understood by each knight upon engaging to run a course, that he is to strike his opponent on no other part than the shield, and that an *atteint* made elsewhere (or the lance broken across) will be adjudged foul, and advantage in former courses forfeited. 4. Lances of equal length, substance, and quality, as far as can be seen, will be delivered to each knight, and none others will be allowed. Particular attention will be most earnestly requested to be paid to this injunction, for the general good and credit of the tournament. N.B.—In default of the lances being splintered in any course, the judge will decide for the *atteint* made nearest to the centre of the shield.

*Actions Worthy of Honour*.—1. To break the most lances. 2. To break the lance in more places than one. 3. Not to put the lance in rest until near your opponent. 4. To meet point to point of the lances. 5. To strike on the emblazonment of shield. 6. To perform all the determined courses.

*Actions most Worthy*.—1. To break the lance in many pieces.

*At the Tourney or Barrier*.—1. Two blows to be given in passing, and ten at the encounter.

*Actions of Dishonour*.—1. To break the lance across the opponent. 2. To strike or hurt the horse. 3. To strike the saddle. 4. To drop the lance or sword. 5. To lose the management of the horse at the encounter. 6. To be unhorsed—the greatest dishonour. 7. All lances broken by striking below the girdle to be disallowed.

Nearly all the armour used had an interesting history attached to it. Lord Craven's came from Hylton Castle, and was worn by Baron Hylton at the battle of Cressy. It was of blue-burnished Milan steel, decorated with gold studs or rivets, and inlaid with the same metal, in arabesques. The casque weighed about forty pounds. It may be noted that the only part of the armour which was considered oppressive by the knights was the casque.

The tilting was opened by Captain Fairlie (the Knight of the Golden Lion), and the Honourable Mr. Jerningham (the Knight of the Swan). The latter was successful in the fourth course. They were followed by the Earl of Eglinton and the Marquis of Waterford. Among the encounters was one on foot between the late Emperor of the French (then Prince Louis Napoleon Bonaparte) and Mr. Charles Lamb, in which the Prince was

defeated. The heavy rain diminished the brilliancy of the pageant, and on the first day the banquet had to be postponed owing to the defective construction of the hall. It was, however, held on the second day, and Mr. Bulkeley, the herald, in his "Right Faithfull Chronicle of the Grand Tourney," becomes grandiloquent in describing the scene. Behind each knight, he says, "floated his rich banneret, borne by men-at-arms, attended by retainers. Seneschals of the castle, with rich black velvet dresses, large gold chains and medals, bearing white wands, supervised the whole. There, zealous botteliers, in velvet dresses, with chains less costly, assiduously applied their office. Chamberlains, in black velvet, regulated the courses; while innumerable servitors, in costumes of blue and yellow, the Earl's coronet and initials emblazoned, everywhere attend. The banquet thus, when the four hundred and twenty richly adorned dams and cavaliers were seated, presented a romantic *coup d'œil*, surpassing all imagination had ever formed of feudal magnificence or modern splendour. It had all the nobleness and grandeur that antiquity possessed, adorned in perfect keeping with all the profuse luxury and elegance that the modern boasts. The moving banners, with exchange of challenges to wine—their waving, as the health was quaffed—had an effect peculiarly chivalresque and pleasing."

### LIGHT AND AIR CASE.

THE case of *Visick v. Criddle* was remitted from the High Court of Justice to the Falmouth Court, and was tried lately before Mr. Bere, Q.C., judge.

The plaintiff is the owner of a shop and dwelling in St. Nicholas Street, Truro. The defendant is proprietor of adjoining premises which have recently been rebuilt. Plaintiff applied for injunction to restrain defendant from obstructing light, and also for damages.

For plaintiff, witnesses were called who stated that formerly his premises were occupied by a printer and stationer, and that the room in the rear lighted from the area, which was then the type-room, had not now sufficient light for that business in consequence of the obstruction of the new buildings. Two Truro builders stated that in their opinion the premises had been depreciated to an extent of from 10% to 15% per annum, in consequence of light to windows in the area being obstructed by defendant's building. Mr. T. R. Olver, of Falmouth, produced a model, and gave as his opinion that all the windows of plaintiff's house should have light at an angle of 45 degrees. The judge, however, stopped Mr. Olver in his evidence, and said that it was absurd to suppose that because defendant had pulled down his building he was bound to give plaintiff light at an angle of 45 degrees. The question was what angle of light was given to the windows before the old building was taken down. The judge, moreover, stated that it was a question how far plaintiff had acquiesced during the progress of the work.

The plaintiff said that he was never an acquiescing party, that he had not been consulted, nor had seen the plans, nor had he ever agreed to the buildings, but on the contrary had objected from time to time, so much so that at one period the work was stopped for six weeks.

In cross-examination, the plaintiff stated that his premises were now unoccupied, a portion being required by the Town Council for widening the street. He contemplated making alterations and additions to the premises. It would be impossible to occupy the house while the building operations were in progress. He further admitted seeing defendant's architect on the premises, and holding a consultation with him and defendant in July 1883, when the new building had only just been commenced. The plans were then handed up to plaintiff, who swore that he had never before seen them.

For the defendant it was contended (1st) that plaintiff was an acquiescing party to all that was done; (2nd) that the buildings were completed before the action was commenced; (3rd) that no material damage was sustained.

Mr. Hicks, the defendant's architect, stated that on July 23, 1883, he met, by appointment, on the new building, the plaintiff, defendant, and his partner, Mr. Smith, when plaintiff stated that if the wall were carried up as proposed by the plans his light would be obstructed, and asked that the recess proposed to be on the eastern side of defendant's building should be placed against his windows instead, so as to increase the size of his area, and with that he would be content. He also pointed out the exact position where he would wish to have that recess placed. That was agreed to, and the work was carried out accordingly, at considerable cost to defendant, who had to purchase windows on the eastern side of his building, so as to place recess on western side. Had seen plaintiff from time to time, who did not raise any further objection until after the back portion was roofed in and the front raised to a height of 28 feet. Plaintiff then told him that if the front portion were carried perpendicular to the full height his light would be obstructed. He, then, to avoid blocking the light had the



wall taken down 3 feet to the second floor joists, and a Mansard roof constructed instead. The building was then carried up and roofed and completed before any complaint was made by plaintiff, notwithstanding that he was frequently on the premises. The architect produced sections of the old building and new, showing that the angle of light to plaintiff's window on the ground floor had not been obstructed by the new building.

Mr. Cock, solicitor for defendant, stated that as the plaintiff's premises were unoccupied, he offered to purchase them for defendant at a handsome profit on the original cost, or to give him a half year's rent to avoid further trouble, which was refused.

Other evidence was given in support of the defendant's case.

The judge, in giving his decision said that, from the evidence of plaintiff's witnesses, one might suppose he looked out upon Elysian fields. As a matter of fact, there stood only 23 feet away another building not belonging to defendant 20 feet higher than the top of plaintiff's house, and further, that in an area between plaintiff and defendant, varying from 3 to 5 feet in width, there stood an ancient building two and three storeys in height, so that it was altogether impossible for the plaintiff to have enjoyed uninterrupted light at any time. While it was impossible for him to accept the evidence of defendant's experts, that the construction of this loftier building did not obstruct light at all because the angle of light at the lower windows was not diminished, yet he could form no other conclusion than that there had been no material damage, and his judgment must be for defendant. He also based his decision on another, and perhaps stronger ground, viz., the overwhelming evidence that plaintiff was constantly on the premises, knew all that was being done, and was virtually a consenting party, which debarred him from an injunction to restrain. There was the interview on July 23, but more important was the alteration in defendant's building, as the result by which he agreed to give the plaintiff an additional amount of light. He could not help thinking also that the plaintiff had been premature in his action, for here was a building unoccupied, and was about to be altered. Plaintiff might, at any rate, have waited to see what the result of these proposals would be, and how far it would affect the light in the area. He should, therefore, give a verdict for defendants, with full costs.

### THE VENTILATION OF PRISONS.

FROM the necessity of keeping the cells thoroughly isolated the ventilation of prisons has always been peculiarly difficult. Any system that did not preserve isolation, while insuring a continuous change of air in each cell, was practically useless, as there was really no system by which several cells could be ventilated into one shaft, while sound was prevented from passing from one cell into another. Messrs. Robert Boyle & Son have devised an arrangement which is at once ingenious and simple. There can be little doubt that it will effectually answer the purpose for which it is intended. The system may be described as follows:—Take a "block" or wing of a prison consisting of say three tiers of cells on each side, composed of thirty cells in each tier or row, making 180 in all. Three brick flues, with an internal measurement of 2 feet by 2 feet, are built at equal distances against each of the side walls and carried up above the roof, where they are surmounted with self-acting air-pump ventilators, 3 feet diameter. Three horizontal shafts run along each tier immediately underneath the ceiling and close to the wall. Each of these shafts is connected with ten cells by means of protected openings, varying in size according to the distance of the opening from the upcast shaft, so as to equalise the quantity of air extracted from each cell. Three of these horizontal shafts (one on each tier) are connected with one of the upcast shafts which forms a junction in the centre. The horizontal shafts vary in size according to their proximity to the top of the upcast shaft, so as to equalise the quantity of air drawn from each tier. A ring of gas jets is fixed at the bottoms of the upcast shafts for the purpose of warming them in cold weather, and preventing condensation of the ascending column of foul air.

The peculiar feature in this arrangement is that the ventilating opening in one cell is isolated from the opening in the other cells by means of a metal plate or partition extending from it along the shaft and past the opening of the second cell to it, and so on with the remaining cells. They are all heated in a similar manner, one partition plate overlapping the other the length of two cells from the one it is connected with until the central upcast shaft is reached, where a divisional plate is fixed in the horizontal shaft to prevent the two currents travelling in opposite directions from creating a swirl as they enter the upcast shaft. Each partition plate is deafened round the opening into the cells by means of a double plate packed with sand. The horizontal shafts, as they pass through the cells, are

also protected and deafened by means of a double casing having the intervening space sand-packed.

The advantage of this system is that every cell is equally and separately ventilated, whilst perfect isolation is secured. It is impossible for sounds to pass from one cell into another through the ventilating shafts or openings, whilst as many as from ten to twenty cells can be ventilated by the one pipe and three or four of these lead into one upcast shaft. An important point is, that there are no valves used in connection with any part of the system, so that when once fixed further attention is not required, and the ventilation cannot be interrupted through negligence, as is usually the case where ventilating arrangements are employed that require looking after. Messrs. Boyle have entitled this arrangement the "silent" system of ventilation for prisons, a very appropriate name. Fresh warmed air is introduced into each cell through vertical channels cut in the walls, protected outside and inside with strong iron gratings. These channels open into the galleries on the inside of the building, and are supplied with air from two large openings at each end of the block, through which the fresh air passes over a heating arrangement in cold weather, and is thoroughly warmed before entering the cells through which it must pass before finding an exit. Messrs. Boyle are taking steps to have the system practically tried at one of the large prisons.

### SPRINGLESS PATENT LOCKS

WE have on several occasions called attention to improvements in the construction of door-locks, and we now place before our readers the invention of Mr. C. D. Douglas, of Glasgow, that we believe is destined to play an important part in the future. The original locks under Bromhead's patent, as well as recent improvements introduced into them, are made by Messrs. Charles D. Douglas & Co., 15 Queenhithe, Upper Thames Street, and the prominent feature is that the latch-bolt is actuated in an entirely novel manner, and without the usual companionship of a spring. A metal weight of suitable form is poised in such a manner that its dead-weight is made to act upon the latch-bolt by any movement of the spindle and follower. The slightest turn of the door-handle, either by under or over movement, causes the weight to rise and the door to open immediately, and whenever the handle is released the weight necessarily falls into its normal position and shoots the latch. The action is unerring, and as there is no spring or anything to become weak with use, this arrangement is likely to last for an indefinite period, without the slightest loss of power. Indeed, it seems impossible to conceive a more simple or secure arrangement. When we consider the nuisance so often attaching to latch-bolts, this improvement must be recognised by every one. The now usual concomitant of arranging a lock to be used for either hand has not been lost sight of here, and the latch-bolt can be altered with ease for this purpose, without interfering with the patent action. The locking-bolt is also made more secure by the addition of levers, and these are applied both to rim and mortice locks. Notwithstanding these noteworthy improvements, the prices of these locks are not higher than well-made ones of the ordinary type. The desire evinced by many architects for a reliable lock that will open a door by push or pull of the handle, has induced Mr. Douglas to turn his attention in this direction, with the result that he has produced a lock in combination with the weighted balance (known in Bromhead's patent) that has virtually four actions. A mere push or pull of the handle withdraws the latch-bolt, and a left or right—*ergo*, over or under—turn has the same effect. But a further noteworthy improvement has to be mentioned. When we speak of the annoyances attendant upon lock furniture in general, of knobs becoming loose and falling off, we mention a nuisance of almost daily occurrence, and that every housekeeper has suffered from more or less. That certain improvements have been introduced we are free to admit, and in connection with the last Building Exhibition at the Agricultural Hall we gave an account of the most simple that had then come under our notice; but these improvements are by no means general as yet. It has, however, been reserved to Mr. Douglas to present us with the newest improvement in lock furniture, and the one most likely, as regards both appearance and cost, to come into universal favour, and this is offered in connection with the patent locks we have described. The security in question is obtained by a division of the knob into two halves. A split spindle passes through the lower or smaller half, and is distended by the insertion of a solid wedge rim, the ends of which overlap the spindle, with two notches in the upper or larger half of the knob. The two halves are then screwed together, and no working parts are visible, the whole presenting a solid, firm, and compact appearance. This arrangement is so perfect that the ingenuity displayed in its manipulation will receive universal approbation. Taken in their entirety, the new Douglas locks and lock furniture must be looked upon as containing the most effective improvements in these appliances hitherto introduced.





**Semper and the Development Theory: a Practical Handbook for English Art-Students.**

SIR,—When I wrote my paper on Semper for the Royal Institute of British Architects, I little expected to find in an English audience any sympathy with my master's ideas, for I knew that they would upset the commonly received notions on art, which it is now the fashion to admit as equal to moral dogmas; and I may say that both in the debate which followed my paper and in the remarks which were made to me privately afterwards, my expectations were fully justified, and I felt that I had been a voice crying in the wilderness to no purpose whatever. You may judge of my surprise and joy at the sight of Professor G. Baldwin Brown's letter, which appeared in last week's *Architect*. Soldiers who have been leading a forlorn hope, and have heard the distant cannon of unexpected allies coming to their rescue, will realise my feelings. I look now already on the battle as won. Scotch students, thanks to their native depth of character and their excellent education, are fully capable of appreciating Semper. Thanks to Professor Brown's eloquent appeal, they will be tempted to read Semper's book, and will soon form an army of Semperites capable of rolling back the thick hordes of English *terre-à-terre* prejudice.

On one point I do not agree with Professor Baldwin Brown. It may be because I have not had his experience of the Englishman's incapacity to grasp either theory or principle; but it seems to me that Semper might be presented in an English garb to our fellow countrymen. A translation of Semper is utterly out of the question; the Englishman would never read it, and the Scotchman is sure to know German well enough to prefer reading the book in the original. Nor am I a partisan of a "boiling-down" of Semper's work, as Professor Brown picturesquely puts it; but I should like to see a man with the eloquence of a Ruskin, or the sharp wit of a Thackeray, or the vigorous style of Professor Baldwin Brown himself, give us Semper entirely digested and transformed into English flesh and sinew. In this form, I am confident Semper would do English students an immense amount of good, for his teaching is verily a living spirit, not a dead word. It is a guide to freedom, not to bondage, as so-called practical teaching often is.

To do this, the English author must have so thoroughly assimilated Semper's teaching that his mind and Semper's should have become absolutely one. Anything short of this will be a failure, and, notwithstanding my high esteem for Mr. Stannus's great erudition and talent, I do not think, judging by his remarks, he has in any way imbibed Semper's spirit. When he said that man was born a pattern-making animal, Semper would have answered him, "Man obtained the instinct of pattern-making, thanks to the countless generations of men who have been educated to pattern-making, by the exercise of textile work, such as is exemplified in basket-making." Is Mr. Stannus prepared to consider basket-making as the very keystone to the principles of decoration, and to place our waste-paper baskets as models of style on a far higher level than either St. Paul's or Westminster Abbey? If he is not, then Mr. Stannus can count himself as placed at the very opposite pole to Semper's teaching.

I have myself shown how a simple necklace of jewels could guide one in judging the works of architects, musicians, painters, sculptors, poets, and even novelists like Dickens. I have also shown how the same necklace furnished us with safe principles in such a vexed problem as the decoration of the dome of St. Paul's. Surely a teaching of that kind is far more *practical* than a bundle of recipes for making wall-papers, or even buildings. Semper's aim was that the arts should no more be taught as trades entirely separate from one another, but, on the contrary, as branches of the art of composing, from the parent stem of which every special art draws its vital force.

In speaking of the laws of *Style* as applied to industrial purposes, Semper, it is true, deplores his want of practical acquaintance with the specific qualities and technical handling of various materials; but, at the same time, he shows a knowledge of them which for an outsider like myself seems quite stupendous. His lamentation, I believe, is only the expression of the intense feeling which all men of real learning experience, of the vastness of what is hidden from them compared to the littleness of what they know. No one man has penetrated so far as Semper into the mysteries of all departments of human industry. It is very unlikely that we shall ever see again another art-thinker capable of such a feat; but England might have the honour of completing Semper's book as he wished to see it one day completed by art-loving specialists—such as highly-educated manufacturers. I should propose, therefore, that Professor G. Baldwin Brown undertake the general scheme of the book, the philosophical thread of which he so thoroughly appreciates, and that for each depart-

ment committees be formed in every manufacturing centre of England to gather the special information required; that consuls and travellers be encouraged to inquire into manufactures in all parts of the world; and then, with the help of all the facts collected together, in this way a book will be made, based on Semper's work, which will give an impetus to the arts of England superior to anything we have experienced before.

I am not one of those who admit of English manufacturers making torpedoes, steel-plated ships, cannons, and other war materials for foreign countries; and I beg, therefore, to be excused in saying that, if the book I suggest be ever produced, it should be reserved for private circulation amongst English students alone, and the loan or sale of the same to any foreigner be considered a case of high treason, and punished as such. It is, therefore, a book not to be undertaken on a commercial basis of sale, but to be taken up by the English Government itself in the interest of the British people.

LAWRENCE HARVEY, A.R.I.B.A.,  
Pupil of the late Professor Semper, Medallist of the  
Paris Ecole des Beaux-Arts.

SIR,—Will you kindly allow me space for the following correction. In my communication to you, printed in your last issue, the words "roof of the Pantheon" should be "roof of the portico of the Pantheon."—Yours, &c.,

G. BALDWIN BROWN.

SIR,—Professor Baldwin Brown says that it is impracticable to make a Science and Art handbook out of Semper's speculations. Might not the learned professor go a step further and declare that, for any use an artist can make of the volume on *Style*, it would have been as well if it had never appeared? I have read attentively what Mr. Harvey and Professor Brown have written about the German sage, and also the leading article in *The Architect*. I had some notion before of Semper's ideas, which I had derived from other sources. But I must frankly confess that I am as far as ever from comprehending the *utility* to an architect or designer of anything that was ever formulated by Semper. In saying this I know that I am not peculiar. An art teacher or a treatise on art becomes valuable when he or it enables us to design. Is there any power in Semper's theory to attain that end? I grant that it is interesting to speculate on evolution, and a course of Semper might enable a youth to astonish his amateur friends and lady relatives by the boldness of his speculations. An architect's work does not, however, consist in talking or in theorising, but in designing and planning; and, so far as I am able to make out, Semper throws no light on those subjects. I was surprised that at the Institute no one had the courage to rise and humbly ask Mr. Harvey to explain the advantage to those present of his master's sublimities. All the great artists from Pheidias to Turner have managed to get on without troubling themselves about the origin of art, and it has yet to be demonstrated whether Semperism can convert us into better architects, sculptors, and painters. What is Professor Brown's experience? For my part I prefer to see an architect's office resemble a Renaissance workshop rather than a college common-room, where men argue for the fun of the thing. Life seems to become shorter every day and art longer, for there are greater demands on our hours, and there is more to be acquired. Is it wise to add to our burdens? Carlyle is in disrepute just now, but when it is proposed that we should endeavour to master a book which even the Germans don't care to see completed, it would be well to remember his maxim, "The knowledge that holds good in working, hold thou to that. Nature says yea to that." The evolutionary scheme of Semper may have been original and may be able to withstand the objections of the framers of rival schemes, but unless I am mistaken, the simple test of practicality is fatal to it. If I am in error I shall be grateful if either Mr. Harvey or Professor Brown will condescend to enlighten my ignorance. I am so much of an utilitarian that, to my mind, Semper's theory appears to be about as valuable to an artist as speculations on the digestive apparatus of the armour-plated fishes of the Red Sandstone era would be to a man who had been invited to a Christmas party. An ordinary mortal could enjoy mince pies, although he might be ignorant of his relation to the beings which are fossilised, and in the same way an architect ought to be able to make a commodious house without knowing anything of ancient or modern stitching. Or, to put the case differently, can we believe that Tennyson or Browning would be able to write better poetry after thinking for a few years on the language in which the primitive needlewomen were accustomed to abuse one another? Once upon a time it used to be recommended by potent, grave, and reverend architects (who spoke by hearsay) that every pupil should endeavour to come up to the Vitruvian standard in the universality of his knowledge. Afterwards men grew more sensible, and the standard was not enforced upon all. But the honest Roman, although he professed to believe in the infinite expansiveness of an architect's



mind, is nowhere if compared with Herr Gottfried Semper. Would it not be wiser to leave the pair to enjoy the retirement from life which they have both laboured so hard to deserve?

Yours obediently,  
CUI BONO.

#### Design for Newcastle Hospital for Infectious Diseases.

SIR,—Will you allow me to point to a misprint in the description of the above plate illustrated last week. It read, "The axes of the wards are placed east and west, so as to have no intervening spaces swept by the prevailing winds." It should read, "The wards are placed east and west, so as to have the intervening spaces swept by the prevailing winds."

I would also point out that it is not mentioned on the plate that the drawing was awarded the second premium in the late competition for the Infectious Hospital at Newcastle, and also to the omission on the drawing of Mr. Walter J. H. Leverton's name as joint-author of the design.

I am, &c.,  
Bedford Row House, W.C. MARK J. LANSDALL.

### REVIEWS.

EGYPT AND THE WONDERS OF THE LAND OF THE PHARAOS. By WILLIAM OXLEY. Trübner & Co.

This book relates to theology rather than to architecture. The author is a spiritualist, and believes "that there was and is an affinity between ancient Egypt and modern Great Britain," or, in other words, Christianity is but a form of Osirianity. There is an addendum relating to Egyptian architecture by Mr. William Menzies, an architect, which concludes with an expression of "the most reverential respect for those great and daring men who so long lived, worked, and died on the banks of the Nile."

THE APPRAISER, AUCTIONEER, BROKER, HOUSE AND ESTATE AGENT AND VALUERS' ASSISTANT. By JOHN WHEELER. Fifth Edition. By C. MORRIS. Crosby Lockwood & Co.

It may be said of Wheeler's Pocket Assistant that it contains the value of everything from a needle to an anchor, and from a brick to a real estate. The little book must be indispensable to an auctioneer or a broker, and use will often be found for it in a surveyor's office.

### CHURCH BUILDING AND RESTORATION.

**Dundee.**—The Tay Square church has been lately undergoing a thorough renovation and repair. The improvements have been carried out from plans prepared by Mr. McCulloch, architect, by the following tradesmen:—Mason, Mr. Duncan; painter, Mr. Wm. Brown; plasterer, Adam & Son; upholsterer, &c., Smith & Son. Mr. Hunter, architect, has been entrusted with the designs for the halls, session-house, &c., and the work will be proceeded with at once.

**Hamilton, N.B.**—A new Established Church at Quarter, near Hamilton, has been opened. The new edifice is an elegant Gothic structure of the Early Decorated period, and is comfortably arranged internally to accommodate 430 sitters. Mr. John B. Wilson, Bath Street, Glasgow, is the architect.

**Maidenhead.**—A Roman Catholic church, dedicated to St. Joseph, has been opened. Only a portion of the plan has been carried out, a proposed square lantern tower not having been commenced. The cost of the work now completed, which has been executed in a substantial manner by the builders, is about 1,500*l.* The building is of red brick and flint stone, the interior surface of the walls being also of red brick. Mr. Leonard Stokes, London, is the architect. Messrs. Silver, Sons, & Filewood, Maidenhead, were the builders.

**Wolverhampton.**—A quarterly meeting of the Wesleyan Circuit was held on Monday, when the subject of church extension was considered. In 1870 the chapel property in the town was valued at 18,000*l.*, and the debt upon it was 4,500*l.* The same class of property is now worth 32,000*l.*, and the debt upon it is only 175*l.* It is intended to spend a further sum of 12,000*l.* in the erection of new and in the extension and improvement of existing chapels. Upon the Circuit Chapel in Darlington Street 2,300*l.* will be expended in the building of a spacious assembly or lecture-room and a suite of new classrooms, and in renewing and otherwise improving the interior of the chapel, at a cost of 4,000*l.* The present chapel at Whitmore Reans will be replaced by one to accommodate 800 worshippers. A school-chapel and class-rooms are to be put up in Waterloo Road North, where 350 people are to be provided for, and sufficient land is to be secured for a subsequent extension. This will involve a present outlay of 2,000*l.* The existing chapels at Blakenhall and at Wednesfield are to be replaced by new structures, to accommodate, the first, a congregation of 450 persons, the cost being 1,500*l.*; and the other

a congregation of 400, the outlay in this case being 1,200*l.* Upon a central plot of land, on the new Corporation estate at Spring Fields, a structure adequate to the needs of 350 people will be erected, at an outlay of 1,000*l.* As much as 9,500*l.* have been already promised, and the contributions will be paid within four years.

### GENERAL.

**The Queen** has subscribed 25*l.* towards the cost of restoring the Queen Eleanor's Cross at Northampton.

**An Exhibition of Works of Art**, organised by the Parks and Galleries Committee of the Glasgow Town Council, has been opened in the halls attached to the South-Side Baths, Gorbals. Among the pictures are eleven which have been lent from the National Gallery.

**M. Chapu** is to be entrusted with the commission of the statue of Gustave Flaubert, which is to be placed opposite the Musée in Rouen.

**A Statue of Mr. Gladstone**, by Mr. Bruce Joy, has been presented to Liverpool by Mr. Sitt, of Birkenhead.

**Professor Baldwin Brown** will deliver a lecture on Monday next, at the South Kensington Museum, on Gottfried Semper and his Artistic Theory.

**An Almanack**, with illustrations, which are accompanied by apt quotations from Shakespeare, has been issued by the Accident Insurance Company, of which Mr. Henry Currey is chairman.

**Lieut.-Col. H. C. Seddon, R.E.**, who has held the appointment of chief instructor in construction and estimating at the School of Military Engineering, Chatham, since 1879, has been appointed to the Staff, for particular service. His successor is Major A. J. Cunningham, lately employed in connection with buildings and roads at Lucknow.

**Two Stained-glass Windows** have been placed in White-lands College Chapel. They have been executed by Messrs. Morris & Co., from designs by Mr. E. Burne Jones.

**Cast of the Gates** in the Church of S. Maclou, at Rouen, which are attributed to Jean Gougon, have been added to the Gallery of Sculpture in the Trocadero.

**The New Flemish Theatre**, in Brussels, is to be lighted by electricity under the direction of the architect, M. Baes.

**Mount Stuart House**, of which Dr. Rowand Anderson is architect, although incomplete, is at present temporarily occupied by the Marquis of Bute. The apartments used are in the southern end of the building, and overlook the Firth of Clyde.

**A Company** has been registered, which proposes to construct a viaduct across the English Channel. The proposed capital is only 200,000*l.*

**A Chemical Laboratory** is to be erected in Downing Street, Cambridge, from the designs of Mr. J. J. Stevenson. The frontage will be about 200 feet.

**Mr. George Trist**, head of the old-established firm of Messrs. Norton, Trist, Watney & Co., auctioneers and surveyors, died a few days ago in his sixty-ninth year. Mr. Trist was constantly employed in arbitrations to determine the value of City property required for railway and street improvements. He steadily opposed the rapidly-growing practice of sharing commissions between auctioneers and solicitors.

**Messrs. Whitmore & Reeves**, of London and Chelmsford, have been appointed architects for the New Winter Palace at Tenby, and are now preparing the working drawings.

**A Handsome Polished Brass Eagle Lectern**, which has been justly described by competent critics as being one of the finest specimens of art work in the Midland counties, was presented to the ancient parish church of Aston, near Birmingham, at Christmas. It has been manufactured by Messrs. Jones & Willis, of Birmingham and London.

**Wood Block Flooring.**—The blocks imported by Messrs. Vigers Bros., of Chelsea, of the London Board School pattern, have recently been adopted for the following buildings:—Edmonton Town Hall, coffee palace at Bethnal Green Museum, Harrington Church, Cumberland; West London Hospital, Hammersmith; Nazareth House, Hammersmith, and numerous Board schools.

**The Incorporated Church Building Society** now holds upwards of 79,000*l.* on trust as Repair Funds for 326 different churches. Last year grants amounting to 6,000*l.* were made towards the erection of twenty-eight churches, the rebuilding of ten, and the enlarging or otherwise improving the accommodation in fifty-five existing churches. These works called for a further sum of 278,135*l.*

**Messrs. Waygood & Co.**, of Falmouth Road, S.E., have received instructions from Mr. W. A. Daw to erect a direct-acting hydraulic passenger-lift at De Vere Gardens, Kensington, being the second that firm have supplied. Messrs. Silber & Fleming have also given Messrs. Waygood & Co. the contract for another direct-acting hydraulic lift for their premises at 71 Wood Street, of similar dimensions to that erected for them at 61 Wood Street, and, like that one, to be worked from the Hydraulic Power Company's mains.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JANUARY 3, 1885.

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No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.

Correspondents are requested as much as possible to make their communications brief. The space we can devote to Correspondence will not usually permit our inserting lengthy communications.

### TENDERS, ETC.

\* As great disappointment is frequently expressed at the non-appearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, 175 Strand, London, W.C., not later than 5 p.m. on Thursdays.

Correspondents, when writing to notify an extension of time, or an alteration of the date of sending in Competitions or Contracts, are requested in their letter of advice to write at the head of the required change—  
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By the Post Office arrangements THE ARCHITECT can now be sent to any part of the United Kingdom by an affixed Halfpenny stamp; hitherto the postage has very frequently been twopence per copy. The Publishers will be happy to forward, for 19s. 6d. per annum, post paid, THE ARCHITECT, to residents in towns and neighbourhoods to which there is no easy access by railway. Terms for the half-year, 10s.



## APPOINTMENTS VACANT.

AYLESBURY.—Jan. 3.—The Local Board require a Surveyor for the Urban Sanitary District of the Parish. Salary, 104*l.* per annum. Mr. George Fell, Clerk to the Local Board, Aylesbury.

BOLTON.—Jan. 6.—Applications are required for the Office of Borough Surveyor. Mr. R. G. Hinnell, Town Clerk, Bolton.

CHESHUNT.—Jan. 5.—Applications are required for the Office of Surveyor for the District. Salary, 175*l.* per annum. Mr. James Death, Clerk to the Local Board, Cheshunt.

COLWYN.—Jan. 6.—The Radnorshire County Roads Board require Applications for the Appointment of a Surveyor for the District of Colwyn. Mr. W. Stephens, Clerk to the Board, Presteigh.

SODBURY.—Jan. 12.—Applications are required for the Appointment of a Surveyor. Salary 300*l.* per annum. Mr. J. Trenfield, Clerk to the Highway Board, Chipping Sodbury.

## COMPETITIONS OPEN.

CHELSEA.—Feb. 25.—Plans are invited for Additions to the Vestry Hall. Premiums of 100, 50, and 30 guineas. Mr. J. Elsdell Salway, Clerk of the Vestry, King's Road, Chelsea.

KING'S NORTON.—Jan. 15.—Plans for the Erection of Four Cottage Homes upon Lands situate at Shenley Fields are required. Mr. Ralph Docker, Clerk of King's Norton Union, Colmore Row, Birmingham.

KING'S NORTON.—Jan. 15.—Plans are invited for the Erection of a Laundry, at the Workhouse, Selly Oak. Mr. Ralph Docker, 57 Colmore Row, Birmingham.

LONDON.—Jan. 7.—Architects experienced in the designing and erection of factories or breweries, and desirous of taking part in a limited competition, are invited to send a statement of the nature and extent of their experience in such work to Y. Z., 1,245, Advertising Offices, 167 Fleet Street. The proprietor pro-

poses to select not fewer than six or more than twelve competitors. A member of the Council of the Institute of Architects has undertaken to assist him in the choice of names, the preparation of the instructions and conditions of competition, and the selection of the designs.

LONGTON.—Feb. 20.—The Longton School Board are about to erect two sets of schools at Normacott and Florence, each to accommodate 700 scholars (220 boys, 220 girls, and 260 infants), and invite architects in the Potteries and Newcastle to send in designs and estimates. Mr. Geo. C. Kent, Clerk to the School Board, Longton.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.

## CONTRACTS OPEN.

ABERGAVERN.—Jan. 6.—For Additions to Holy Trinity Church. Mr. Thomas Nicholson, Architect, Hereford.

AKROYDON.—Jan. 9.—For Building Seventeen Houses and Shop. Mr. James Farrar, Architect, Crossley Buildings, 29 Northgate, Halifax.

ALTOFTS.—Jan. 6.—For Alterations and Additions to Cemetery Premises. Mr. Leathley, Clerk to the Local Board, Altofts.

ASHTON-ON-MERSEY.—Jan. 27.—For Leveling, Paving, Metalling, and Channelling Streets. Mr. A. McKenzie, Surveyor, Broomfield Road, Hale, near Altrincham.

BALBY WITH HEXTHORPE.—Jan. 14.—For Furnishing Desks and other Apparatus for Board School. Messrs. Wilson & Masters, Architects, Hartshead Chambers, Sheffield.

BALLINASLOE.—Jan. 6.—For Building Industrial School. Mr. Kempster, Architect, Ballinasloe.

BALLYCOTTON, Co. CORK.—Jan. 7.—For Construction of Pier, Breakwater, and other Works. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

BEDFORD.—Jan. 6.—For Works in connection with Construction of Service Reservoir, Filter Beds, and Storage Tank. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.

BERMONDSEY.—Jan. 9.—For Additions, Machinery, and Engineering Works at Public Baths. Messrs. G. Elkington & Son, Architects, 95 Cannon Street, E.C.

BERWICK.—Jan. 8.—For Providing River and Land Stones, Breaking and Laying on Stones, &c., for the year. Mr. E. Willoby, Clerk to the North and Islandshire Highway District Board, Berwick.

BEXHILL.—Jan. 15.—For Enlarging and Part Rebuilding Church of St. Mark. Messrs. Riches & Esam, Architects, Station Road, Bexhill.

BIRKENHEAD.—Feb. 5.—For Supply and Erection of Two Pumping Engines, with Pumps and Steam Boiler, at Spring Hill Waterworks. Mr. W. A. Richardson, Water Engineer, 50 Hamilton Square, Birkenhead.

BLACKBURN.—Jan. 10.—For Supply of Material, Labour, Tools, &c., for the year, including Paving Setts, Sidestones, Channel Stones, and Circular Curbs, Flags, Ashlar Wall Stone and Landings, Stone for Underbedding and Hand-pitching, Granite (Macadam and Circular Curbs), Limestone (Cob and Broken) and Lime, Cement, Gravel and Sand, Bricks and Clay, Earthenware Pipes, Wrought Iron (Bar, Sheet, and Hoop) and Steel. Mr. J. B. McCallum, Borough and Water Engineer, Municipal Offices, Blackburn.

BLAYDON-ON-TYNE.—Jan. 8.—For Construction of Two Covered Service Reservoirs, &c., and Laying Cast-iron Pipes (13,800 yards), Supply of Cast-iron Pipes, Valves, Hydrants, &c. Mr. H. Laws, C.E., 18 Grainger Street West, Newcastle-on-Tyne.

COOKNEY.—For Building Church. Mr. J. Russell Mackenzie, Architect, 259 Union Street, Aberdeen.

## R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,  
INVENTOR and PATENTEE of the  
SAFETY WINDOW WITH REVERSIBLE SASHES

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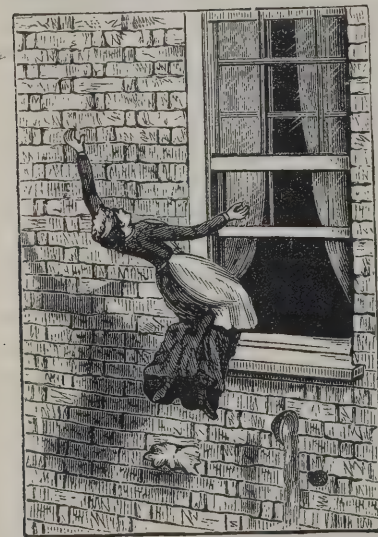
Which has gained at the INTERNATIONAL HEALTH and  
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2 Gold, 4 Silver, and 4 Bronze Medals,  
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The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5*s.* for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—



Farnstable  
Belfast and 10 miles round  
Bournemouth and 10 miles round  
Brighton and 8 miles round  
Bristol and 20 miles round, and  
Gloucestershire, Somerset, Dorset,  
Wilts, Mon., Glamorganshire  
Dublin and 20 miles round  
Dundee and 30 miles round  
Edinburgh  
Exeter and 20 miles round  
Glasgow and 30 miles round  
Gloucester and Cheltenham

Hancock, Pilton Street.  
W. J. Watson, Royal Avenue, Belfast.  
H. W. Jenkins & Son, Builders.  
Cheesman & Co., Kensington Street.  
Brock & Bruce, Albert Road, St. Philip's.  
J. & W. Beckett, 28 South King Street.  
Stewart Robertson, 34 Bank Street.  
W. R. Commings, 45 Longbrook Street.  
Baird, Thompson & Co., 24 Bath Street.  
The Sanitary and Economic Association.

Hastings  
Hereford and 5 miles round  
Ilfracombe  
Leeds and 5 miles round  
Liverpool  
Ludlow and Leominster  
Newton Abbott and 10 miles round  
Nottingham and 15 miles round  
Reading and 5 miles round  
Southampton and 7 miles round  
Sunderland and 10 miles round  
Torquay and 5 miles round



Taylor Bros., Builders.  
C. Lawrence, 41 Portland Street.  
W. Jones, 4 Osborne Road.  
John Wm. Lewes, 65 Albion Street.  
Evan Griffiths & George Fingning, Sefton Works  
Miles Street.  
J. Grosvenor, Ludlow.  
Parker Bros., Courtney Street.  
Henry Vickers, Welford Road.  
Driver & Co., St. Mary Saw Mills, Southampton  
C. & W. Watson, Union Street.



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"From experience of them in my own house, and other buildings, public and private, where they have been applied under my direction, I can confidently, and will always have great pleasure in recommending them."

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**The Late Prof. MACQUORN RANKIN, Professor of Engineering, Glasgow University.**

"There is no time throughout the whole year but when there is a sufficient movement of the atmosphere at the level of the house-tops to cause the Air-Pump Ventilator to act."

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"They are constructed on sound scientific principles, act in strict accordance with the laws of nature, and cannot fail to operate."

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FIRST PRIZE MEDAL (SILVER), THE HIGHEST AND **ONLY AWARD** GIVEN FOR VENTILATORS OR SANITARY APPLIANCES, SANITARY AND ART EXHIBITION, EASTBOURNE, OCTOBER, 1884.

HIGHEST AND ONLY PRIZE (SILVER MEDAL), AWARDED TO VENTILATORS, INTERNATIONAL EXHIBITION, LONDON, SEPTEMBER, 1884.

GOLD MEDAL (ONLY PRIZE OFFERED) OPEN VENTILATION COMPETITION, BIRKENHEAD, JUNE, 1884.

FIRST PRIZE (SILVER MEDAL), MINING INSTITUTE, CORNWALL, SEPTEMBER, 1883.

FIRST PRIZE MEDAL, CORK INTERNATIONAL EXHIBITION, CORK, SEPTEMBER, 1883.

HIGHEST AND ONLY PRIZE AWARDED TO EXHAUST VENTILATORS, HYGIENIC EXHIBITION, LONDON, JUNE, 1883.

FIRST PRIZE (SILVER MEDAL), NORTH-EAST COAST EXHIBITION, TYNEMOUTH, OCTOBER, 1882.

GOLD MEDAL (HIGHEST PRIZE), INTERNATIONAL EXHIBITION OF MEANS AND APPLIANCES FOR THE PROTECTION AND PRESERVATION OF HUMAN LIFE, LONDON, JULY, 1882.

£50 PRIZE (ONLY PRIZE OFFERED), INTERNATIONAL VENTILATION COMPETITION, LONDON, MAY, 1882.

SILVER MEDAL (HIGHEST PRIZE), EASTBOURNE SANITARY EXHIBITION, AUGUST, 1881.

FIRST PRIZE (ONLY ONE AWARDED TO ROOF VENTILATORS), INTERNATIONAL MEDICAL AND SANITARY EXHIBITION, LONDON, JULY AND AUGUST, 1881.

ROBERT BOYLE & SON, 64 HOLBORN VIADUCT, LONDON, AND 110 BOTHWELL STREET, GLASGOW.



**CANTERBURY.**—Jan. 3.—For Building Business Premises, Warehouses, Stabling, Bacon Stoves, Cottage, Walling, and Offices. Mr. J. Cowell, Architect, Cathedral Precincts, Canterbury.

**CLAINES.**—Jan. 21.—For Supplying and Laying Cast-iron Pipes and Water Mains, Fixing Valves, Hydrants, &c. Mr. A. H. Parker, Surveyor to the Claines Local Board, 5 Foregate Street, Worcester.

**COLCHESTER.**—Jan. 10.—For Alterations and Additions to Offices of the Equitable Insurance Society. Mr. F. Evelyn Morris, Architect, West Stockwell Street, Colchester.

**COLCHESTER.**—Jan. 15.—For Building Shop in Long Wyre Street. Mr. J. F. Goodey, Architect, 2 Victoria Chambers, West Stockwell Street, Colchester.

**CROSS HILLS.**—Jan. 5.—For Extension of Hayfield Mills Premises, Glusburn. Messrs. Petty & Ives, Architects, Waterhouse Street, Halifax.

**CROYDON.**—Jan. 10.—For Supply of Furniture, &c., for the Guardians. Mr. Alfred G. Blake, Clerk, 15 George Street, Croydon.

**DERBY.**—Jan. 5.—For Alterations at County Court Offices. Drawings, &c., at the County Court Office, Derby. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

**DRUMMUIR.**—Jan. 9.—For Building Manse. Messrs. Matthews & Mackenzie, Architects, Aberdeen.

**DUBLIN.**—Jan. 7.—For Alterations in Workhouse for Accommodation for Nurses. Mr. W. H. Byrne, Architect, 52 Dame Street, Dublin.

**DUMFRIES.**—Jan. 3.—For Supplying and Erecting Telescopic Gasholder in Two Lifts. Mr. Wm. Martin, Town Clerk, Dumfries.

**EXETER.**—Jan. 6.—For Alterations and Additions to Homesteads on Barton Farm, Broadclyst, and Upton Farm, Clyst Saint Lawrence. Mr. C. E. Ware, Gandy Street Chambers, Exeter.

**FAREHAM.**—Jan. 5.—For Construction of Roads (1,865 yards) at Lee-on-the-Solent. Mr. E. A. Robinson, Victoria Hotel, Lee-on-the-Solent, Fareham, Hants.

**FARNHAM.**—Jan. 5.—For Supplying Pair of Horizontal Steam-Pumping Engines and Boilers. Mr. James Lemon, C.E., Palace Chambers, Westminster.

**FINCHLEY.**—Jan. 19.—For Supply of Guernsey and other Hand-broken Granite (2,300 tons). Mr. G. W. Brumell, Surveyor to the Local Board, Church End, Finchley.

**GAINSBOROUGH.**—Jan. 14.—For Sinking Bore Hole for Water Supply of Town. Mr. C. Greenhaigh, Surveyor, Chapel Staithe Offices, Gainsborough.

**GOOLE.**—Jan. 19.—For Metalling, Levelling, Paving, Flagging, Channelling, and Draining certain Streets. Mr. E. C. B. Tudor, C.E., Local Board Office, Market Hall Chambers, Goole.

**GRANGEMOUTH DOCKS.**—Jan. 7.—For Lighting the Docks by Electricity. Mr. James Clapperton, Canal House, Port Dundas, Glasgow.

**GLASGOW.**—Jan. 12.—For Supply and Erection of a Malleable-iron Girder Bridge, to carry the Garvel Dock Lines over road from Greenock to Port Glasgow. The Engineer's Office, St. Enoch Station, Glasgow.

**GLUSBURN.**—Jan. 5.—For Extension of Mill Premises, Hayfield Mills. Messrs. Petty & Ives, Architects, Waterhouse Street, Halifax.

**GREENOCK.**—Jan. 5.—For Construction of Two Warehouses and Sheds (Brick and Iron, and Covered Way, Iron and Concrete), James Watt Dock. Mr. W. R. Kiniple, C.E., 17 West Blackhall Street, Greenock.

**GREENWICH.**—Jan. 12.—For Relining First-class Swimming Bath (Bricks and Tiles). Mr. Alfred Budds, Clerk to the Commissioners of Public Baths and Washhouses, Greenwich.

**GUIDE BRIDGE.**—Jan. 9.—For Constructing Footbridge and Subway at Railway Station. The Engineer, 28 London Road, Manchester.

**HALIFAX.**—Jan. 8.—For Supply of Fireclay Retorts and Bricks during the year. Mr. Wm. Carr, Manager, Gasworks, Halifax.

**HAMMERSMITH.**—Jan. 7.—For Road Making and Paving Works, Ashchurch Grove. Mr. T. E. Jones, Broadway House, Hammersmith.

**HARDINGSTONE.**—Jan. 19.—For Construction of Sewers, Tanks, Buildings, and other Works in Connection, St. James's End. Messrs. Ingman & Sons, Surveyors, Hazlewood Road, Northampton.

**HAYBOROUGH.**—Jan. 7.—For an Addition, and Altering Farmhouse. Mr. J. S. Seymond, Architect, Stanwix, Carlisle.

**HEREFORD.**—Jan. 12.—For Supply of Cast-iron (Turned and Bored) Gas Pipes and Irregular Castings. Mr. William Parlyby, Gas Engineer and Manager, Corporation Gasworks, Hereford.

**HERNE BAY.**—Jan. 13.—For Building Board Schools. Mr. Thomas W. Collard, Clerk to the Herne School Board. The Institute, Herne Bay.

**HILLINGDON.**—Jan. 7.—For Building Isolation Block, Boundary Walls, Alterations, and Additions to Administrative Department and other Works in connection with the Joint Hospital. Mr. Charles Woodbridge, 38 High Street, Uxbridge.

**INDIA.**—Jan. 13.—For Supply of Ironwork for Well Kerbs. The Director-General of Stores, India Office, Westminster, S.W.

**KENSINGTON.**—Jan. 6.—For Taking Down Shop, Walls, and Fences, Wiple Place. Mr. William Weever, Surveyor, Town Hall, Kensington High Street, W.

**KEYCOL HILL.**—Jan. 5.—For Building Coal Store, &c., at the Waterworks. Mr. W. J. Harris, Clerk to the Local Board, Sittingbourne.

**KNIGHTON.**—Jan. 9.—For Construction of Brick Sewers (4,350 yards) and Pipe Sewers (13,200 yards) with Manholes, Lampholes, and Ventilators, Outfall Tanks, Pumping-house, Engines and Pumps, Irrigation Area, Fencing Roads, Embankments, &c. Mr. E. L. Miles, Surveyor, Horsefair Street, Leicester.

## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

"Yours, &c.

"JAMES WEIR, F.R.I.B.A.

"To Mr. Grundy."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

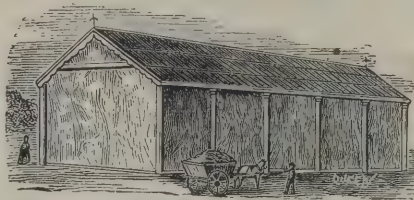
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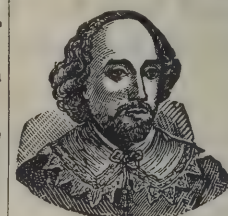
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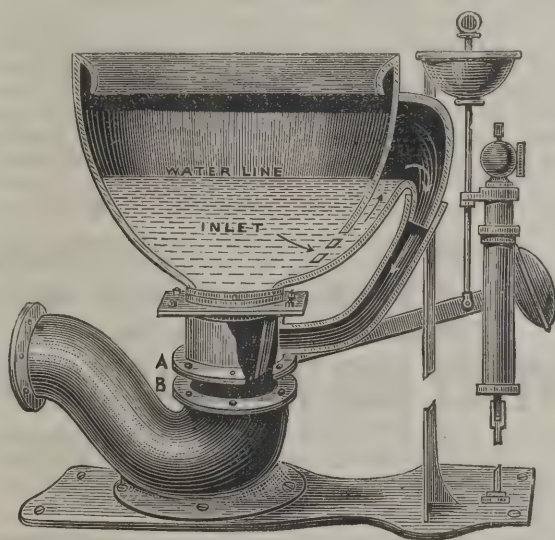
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WATER-CLOSET



WITH  
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(Patent No. 3754).

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet, the base of the collar being round is flanged **A**; this is attached to a corresponding flange **B**, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate trap is employed.

The “Safety” Valve Water-Closet, like the “Nestor” as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within  $1\frac{1}{2}$  in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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LEEDS.—Jan. 8.—For the Year's Supply of Cast-iron Pipes, Small Castings, &c. Mr. E. Filliter, 16 East Parade, Leeds.

LEITH, N.B.—Jan. 10.—For Painting and Making Additions to Victoria School, Newhaven. Mr. George Craig, Architect, 85 Constitution Street, Leith.

LYNDHURST.—Jan. 13.—For Erection of Stone Walling (350 yards) to Enclose Burial Ground. Mr. George S. Coxwell, Solicitor, Lyndhurst.

LYNN.—Jan. 8.—For Building Wesleyan Chapel and School, London Road. Mr. John A. Hillom, Wesleyan School, Tower Street, Lynn.

MIDDLESBROUGH.—Jan. 21.—For Building Engine House, &c., for Hydraulic Machinery at Docks. Mr. William Bell, Architect, Railway Offices, Northgate, Darlington.

MIDLAND RAILWAY.—Jan. 15.—For the Supply, Delivery, and Fixing of Ironwork in Reconstruction of Bridge over Railway, Cleve Station. Mr. A. A. Cangle, Engineer, Midland Railway, Derby.

MORESBY.—Jan. 3.—For Building Chancel, and Alterations to Church of St. Bridget. Mr. J. Bingley, Architect, 7 Lowther Street, Kendal.

NEWTON.—Jan. 12.—For Extensive Additions to Severn Valley Mills. Mr. R. Hurst, Architect, Severn Street, Welshpool.

OXFORD.—Jan. 3.—For Supply of Stores, Ironmongery, Wrought Iron, and Smith's Work, &c., for one or two years. Mr. W. H. White, Surveyor to the Local Board, Bath Court, New Road, Oxford.

PECKHAM RYE.—Jan. 13.—For the Formation of 447 feet run of Tar-paved Walks, 6 feet in width, Peckham Rye Common. The Architect, Board of Works, Spring Gardens, S.W.

PENDLETON.—Jan. 12.—For Construction of Railway from Pendleton to Hindley (13 miles 9 chains); Connecting Line at Agecroft (38 chains); and Connecting Line at Westthoughton (1 mile 30 chains). The Engineer, Hunt's Bank, Manchester.

PENDLEBURY.—For Building Seven Cottages. Mr. A. T. Walker, 23 Park View, Walkden.

PLYMOUTH.—Jan. 5.—For Building Cattedown Road Schools, Caretaker's Residence, &c. Mr. H. J. Snell, Architect, Courtenay Street, Plymouth.

PORTO RICO.—March 22.—For Supply of Dredging Apparatus. The Spanish Consulate-General, 21 Billiter Street, E.C.

PORTSKEWETT JUNCTION.—Jan. 6.—For Building House and Eight Cottages at Rogiet. The Engineer, Newport Station, Mon.

RAINFORD.—Jan. 17.—For Supplying 100 tons of Second Setts, 5 or 6 inches wide by 7 or 8 inches deep. Mr. B. Smith, Clerk to the Local Board, Rainford.

ROCHDALE.—For Cast and Wrought Iron Work and Steel Joists for Building Mill. Messrs. Potts, Pickup & Dixon, Architects, 1 Princess Street, Manchester, and Oldham.

ROCHDALE.—For Draining, Levelling, and Laying the Bowling Green for the Smallbridge Reform Club Building Company. Mr. Whitworth, 143 Halifax Road, Rochdale.

ROCHDALE.—Jan. 5.—For Forming, Paving, and Sewering, &c., of St. Peter's Street, Newbold, Rochdale. Mr. George McCall, Local Surveyor to the Ecclesiastical Commissioners, 12 Drake Street, Rochdale.

ROCHDALE.—Jan. 7.—For Supply of Retorts, Fire-bricks, Blocks, and Tiles during the twelve months. Mr. T. Banbury Ball, Manager, Gas-works, Rochdale.

RUNCORN.—Jan. 6.—For Building Board Schools, Greenway Road, in Two Departments (207 Girls and mixed, 274 Children). Messrs. F. & G. Holme, Architects, 8 Westminster Chambers, Dale Street, Liverpool.

SALFORD.—Jan. 5.—For Supply of Stone for Headstones for Cemetery. The Borough Engineer, Salford.

SOUTHAMPTON.—Jan. 3.—For Works of Draining, Fencing, &c., in the Polygon. Mr. E. T. Howell, Surveyor, 6 Portland Street, Southampton.

SHEERNESS.—Jan. 9.—For Reseating, Improving, and Enlarging of Holy Trinity Church. Mr. R. Wheeler, Architect, Tunbridge Wells.

SOUTHAMPTON.—Jan. 13.—For Improvement Works, Mordaunt Road. Mr. W. B. G. Bennett, Borough Surveyor, Southampton.

STAFFORD.—Jan. 5.—For Supply of Wrought Iron, Iron Castings, Nuts and Bolts, Tools, &c., Steam Pipes, Bricks, Cement, and Lime for the year. The Borough Surveyor, Borough Hall, Stafford.

ST. HELENS.—Jan. 21.—For Building Engine Shed, Coke Stage, and Thirty-three Dwelling-houses. Mr. William Bell, Architect Railway Offices, Northgate, Darlington.

ST. MARYLEBONE.—Jan. 13.—For Works and Materials for one year—viz., Supply of Thames Ballast, Sand, Cement, Lime, &c. Ironwork for Sewers, Glazed Stoneware, Sewage Pipes, &c., &c. Mr. W. E. Greenwell, Vestry Clerk, Court House, St. Marylebone.

ST. MARYLEBONE.—Jan. 15.—For Supply for the year of Broken Stone, Footway Kerb, and Yorkshire and other Footway Paving. Mr. W. E. Greenwell, Vestry Clerk, Court House, St. Marylebone.

STREATHAM.—Jan. 13.—For Cleaning Out Pond, and Works in connection. Board of Works, Spring Gardens, S.W.

SWANSEA.—Jan. 5.—For Erection of Building as Office and Shelter at Prince Dock, for Dockmaster and Gatemen. Mr. Francis James, Harbour Offices, Swansea.

SWANSEA.—Jan. 31.—For Alterations and Additions at Herbert's Lodge, Bishopston. Mr. Henry Hall, Architect, 19 Doughty Street, Mecklenburgh Square, London.

SWINTON.—Jan. 6.—For Building Two Mortuary Chapels, Registrar's House, Gateway, and Boundary Wall at Cemetery. Mr. R. Knill Freeman, Architect, Bolton-le-Moors.

TWYFORD.—Jan. 5.—For Supply of about Forty Street Lamps, Cast-iron Posts with Lamps for Gas, and Cast-iron Posts with Empire Oil Lamps. Mr. M. Nash, Secretary to the Inspectors, Twyford.

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**WALSSEND-ON-TYNE.**—Jan. 12.—For Building School-rooms, &c., and Enlarging the Biddle Schools. Mr. T. Southron, Architect, 70 King Street, South Shields.

**WANSTEAD.**—Jan. 12.—For Construction of 500 feet run of 12-inch Pipe Sewer, with Manhole, Ventilators, and Junctions. Also for Construction of 460 feet run of 12-inch surface Water Drain. Mr. William Blewitt, Clerk, Local Board Offices, Wanstead, E.

**WANSTEAD.**—Jan. 12.—For Construction of 364 feet run of 9-inch Drain, and 300 feet of 12-inch Pipe Sewer, with Manholes and Ventilators, also Laying 260 feet run of 12-inch surface Water Drain. Mr. William Blewitt, Clerk, Local Board Offices, Wanstead, E.

**WAREHAM.**—Jan. 12.—For Building Chancel and Organ Chamber and Reseating Church of St. Mary, East Stoke. Messrs. John Colson & Son, Architects, 45 Jewry Street, Winchester.

**WESTMINSTER.**—Jan. 7.—For Repairing Floor of Pipe Chambers of Laundry. Mr. H. Monson, Surveyor, St. James's Vestry Hall, Piccadilly.

**WHITLEY.**—For Supply of 450 yards 24-inch, 200 yards 21 inch, 600 yards 18-inch best Seconds Pipes. Mr. Henry Neild, Whitley, near Northwich.

**WIGAN.**—For Removal of Boilers from Mills at Garstang to Wigan. Mr. G. Scarborough, Meadows Colliery, Frog Lane, Wigan.

**WILLESSEN.**—Jan. 6.—For Supply of Unclimbable Iron Fencing, Two Double Gates, and Three Single, &c. The Superintendent, Burial Board, Vestry Hall, Church End, Willesden.

**WINDSOR.**—Jan. 7.—For Attending to Public Lamps during the Year. Mr. C. T. Phillips, 1 Sheet Street, Windsor.

**WOODBIDGE.**—Jan. 7.—For Building House. Mr. William Eade, Architect, Post Office Chambers, Ipswich.

**WORTLEY.**—Jan. 8.—For Construction of Rubble Stone Boundary Walls, Gates, &c., Thornhill Estate. Mr. George Pooley, Surveyor, 25 Charing Cross, London, S.W.

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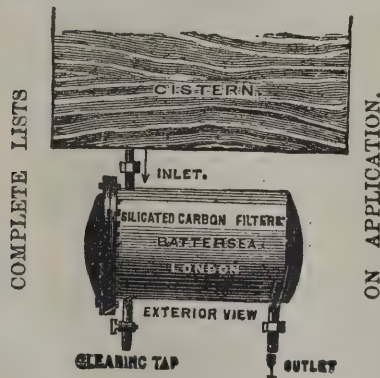
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|                                    |      |    |   |
|------------------------------------|------|----|---|
| JONES & ROWE, Worcester (accepted) | £228 | 10 | 0 |
|------------------------------------|------|----|---|

**CARLISLE.**

For Supply of Trapped Iron Gallies, Valves, Manhole and Lamphole Covers, and other Sewer Ironwork, Carlisle. Mr. H. U. M'KIL, City Surveyor.

|   |     |    |   |
|---|-----|----|---|
| D. & W. Stanfield & Son, Carlisle       | £17 | 18 | 7 |
| Smith, Patterson & Co., Blaydon         | 17  | 5  | 3 |
| Executors of D. Clark, Carlisle         | 15  | 3  | 2 |
| J. & J. MATTHEWS, Carlisle (accepted)   | 11  | 18 | 3 |
| Jukes, Coulson, Stokes & Co., Sheffield | 11  | 17 | 9 |

**CAVERSHAM.**

For New Billiard-room at Balmore, Caversham, Oxon, for General Radcliffe. Messrs. BROWN & ALBURY, Architects.

|                    |      |    |   |
|--------------------|------|----|---|
| Higgs, Reading     | £916 | 0  | 0 |
| Woodroffe, Reading | 815  | 0  | 0 |
| WERNHAM, Reading*  | 785  | 0  | 0 |
| Dodd, Caversham†   | 628  | 10 | 0 |

\* Accepted subject to alterations reducing amount to £750.

† Error in estimate.

**CHATHAM.**

For Construction of Iron Pier on Site of Existing Sun Pier on the Medway, Chatham. Messrs. LAW & CHATTERTON, Engineers, Queen Anne's Gate, Westminster.

|                      |        |   |   |
|----------------------|--------|---|---|
| Shane & Co.          | £5,970 | 0 | 0 |
| Thames Ironworks Co. | 4,600  | 0 | 0 |
| Jukes & Co.          | 4,540  | 0 | 0 |
| Liney                | 4,462  | 0 | 0 |
| Taylor & Neate       | 4,333  | 0 | 0 |
| Kellett & Bentley    | 4,240  | 0 | 0 |

**CHELSEA.**

For Fitting-up New Wing of Infirmary, Cale Street, Chelsea, with Hot-Water Warming and Supply Apparatus, for the Guardians of St. Luke, Chelsea. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities not supplied.

*Amended Tenders.*

|                                |      |    |   |
|--------------------------------|------|----|---|
| Stidder & Co.                  | £575 | 0  | 0 |
| Pratt                          | 182  | 0  | 0 |
| Fraser & Co.                   | 475  | 0  | 0 |
| May Bros.                      | 447  | 0  | 0 |
| Strode & Co.                   | 430  | 0  | 0 |
| Crane                          | 427  | 0  | 0 |
| Clements, Jeakes & Co.         | 426  | 13 | 0 |
| Bradford & Co.                 | 422  | 0  | 0 |
| Kinnell & Co.                  | 360  | 0  | 0 |
| KNIGHT, Westminster (accepted) | 357  | 0  | 0 |

**CHIGWELL.**

For Additions and Alterations to No. 1 School, Chigwell, Bow, for the Chigwell School Board. Mr. EDMOND EGAN, Architect. Loughton, Essex. Quantities by the Architect.

|                     |        |    |    |
|---------------------|--------|----|----|
| R. & W. Foster      | £1,303 | 16 | 9  |
| Walker              | 1,282  | 1  | 2  |
| Stuart              | 1,146  | 12 | 4  |
| Watson              | 1,111  | 13 | 10 |
| Flaxman             | 1,133  | 0  | 0  |
| Scharien & Williams | 1,089  | 0  | 0  |
| Wells               | 1,038  | 0  | 0  |
| Robson (too late)   | 1,016  | 0  | 0  |
| Knight              | 999    | 0  | 0  |
| Baxter (too late)   | 996    | 0  | 0  |
| Egan                | 989    | 0  | 0  |
| Scott               | 972    | 0  | 0  |
| Barnes              | 963    | 0  | 0  |
| PARKER (accepted)   | 949    | 0  | 0  |

**COCKERMOUTH.**

For Converting New Street Schools, Cocker-mouth, into Primitive Methodist Chapel. Mr. R. S. MARSH, Surveyor, Cocker-mouth.

*Mason, Waller, and Slater.*

|               |     |    |   |
|---------------|-----|----|---|
| Borrowdale    | £95 | 0  | 0 |
| Allim         | 95  | 5  | 0 |
| GIBBON BROS.* | 68  | 19 | 0 |

*Joiner and Carpenter.*

|             |     |    |   |
|-------------|-----|----|---|
| Crown & Co. | 187 | 9  | 0 |
| Robinson    | 163 | 10 | 0 |
| ARMSTRONG*  | 162 | 5  | 0 |
| Reay        | 167 | 15 | 0 |

*Plasterer.*

|            |    |    |   |
|------------|----|----|---|
| Waller     | 21 | 10 | 0 |
| Altringham | 17 | 0  | 0 |

*Painter and Glazier.*

|         |    |    |   |
|---------|----|----|---|
| Paris   | 44 | 9  | 0 |
| Boyd    | 41 | 6  | 2 |
| RITSON* | 30 | 15 | 0 |

\* Accepted tenders.

**CUCKFIELD.**

For Additions to National School Buildings, Cuckfield, Hayward's Heath. Mr. F. W. HOLLOWAY, Architect.

|                        |      |   |   |
|------------------------|------|---|---|
| Lockyer, Brighton      | £696 | 0 | 0 |
| Taylor, Nutfield       | 585  | 0 | 0 |
| Rowland & Son, Horsham | 510  | 0 | 0 |
| Knight, Cuckfield      | 488  | 0 | 0 |
| Bruton, Brighton       | 485  | 0 | 0 |
| Redford, Horsham       | 399  | 0 | 0 |

**DONCASTER.**

For Building Church (or Church School) to seat 485 persons, at the Holmes, Doncaster. Quantities not supplied.

|                                    |        |   |   |
|------------------------------------|--------|---|---|
| Athwn Bros. & Gill (lowest tender) | £3,160 | 0 | 0 |
|------------------------------------|--------|---|---|

Ten Tenders were received.

**FENTON.**

For Building Church of St. Paul, Mount Pleasant, Great Fenton.

|                            |        |   |   |
|----------------------------|--------|---|---|
| BRADBURY, Stoke (accepted) | £1,483 | 0 | 0 |
|----------------------------|--------|---|---|

The tenders sent in ranged from £1,830 to £1,480.

**GRAVESEND.**

For Supply of Cornish Boiler at the Union, Gravesend.

|                                     |      |    |   |
|-------------------------------------|------|----|---|
| Reeve & Co., Canal Ironworks        | £119 | 0  | 0 |
| Perrin, Hoxton                      | 140  | 17 | 0 |
| E. A. & H. Sandford, Gravesend      | 128  | 10 | 0 |
| Fraser & Co., Commercial Road East  | 125  | 0  | 0 |
| LARNDER BROS., Rochester (accepted) | 105  | 0  | 0 |

**FRODSHAM.**

For Construction of Sewer at Newtown, Frodsham. Mr. HENRY BANCROFT, Engineer, 83 Mosley Street, Manchester. Dale, Northwich. £637 6 0  
Eighteen Tenders were received.

**GATEHOUSE.**

For Building Town Hall at Gatehouse of Fleet, N.B. Mr. J. ROBERT PEARSON, Architect, 74 George Street, Edinburgh. Quantities by Mr. R. Roberts, Edinburgh.

*Accepted Tenders.*

|   |  |  |  |
|---|--|--|--|
| Hume, Gatehouse, mason.                     |  |  |  |
| Henry, Gatehouse, joiner.                   |  |  |  |
| Anderson & Son, Edinburgh, slater.          |  |  |  |
| Drummond & Son, Dumfries, plumber.          |  |  |  |
| McNaught & Sons, Castle Douglas, plasterer. |  |  |  |

**HALIFAX.**

For Improvement Work, Free School Lane, and Construction of Sewer (770 yards), Halifax. Mr. ESCOTT, Borough Engineer.

|                               |        |    |    |
|-------------------------------|--------|----|----|
| Marvell & Paver, Leeds        | £3,544 | 0  | 0  |
| Tempest & Co., Keighley       | 3,230  | 0  | 0  |
| Jenkinson, Halifax            | 3,040  | 0  | 0  |
| Hudson, Boothtown, Halifax    | 2,947  | 0  | 0  |
| Brook & Son, Halifax          | 2,548  | 0  | 0  |
| G. & H. Tyson, Halifax        | 2,520  | 0  | 0  |
| NOWELL, Manchester (accepted) | 2,344  | 13 | 11 |
| Engineer's estimate           | 2,504  | 0  | 0  |

**HANWELL.**

For the Construction of a Pipe Sewer in the Uxbridge Road, Hanwell, Middlesex, for the Burial Board of St. Mary Abbots, Kensington, W. Mr. EDWD. MONSON, jun., A.R.I.B.A., Surveyor to the Board, Grosvenor House, The Vale, Acton, W.

|  |      |    |   |
|--|------|----|---|
| Rainton, Hanwell                       | £295 | 10 | 0 |
| Tozer, Notting Hill                    | 211  | 10 | 0 |
| Dugate, Hanwell                        | 210  | 0  | 0 |
| Tomes & Wimpey, Hammersmith            | 154  | 0  | 0 |
| Mears, Kensington                      | 145  | 0  | 0 |
| Macklin, Hanwell                       | 144  | 10 | 0 |
| Rogers & Dickens                       | 143  | 0  | 0 |
| Ford & Everett, Westminster            | 139  | 0  | 0 |
| Owen & Brown, Fulham                   | 127  | 0  | 0 |
| Aldred, Kew                            | 125  | 0  | 0 |
| Pizzey, Hornsey                        | 118  | 10 | 0 |
| NOWELL & ROBSON, Kensington (accepted) | 113  | 0  | 0 |

**KING'S NORTON.**

For Laying Sewers for Drainage of King's Heath and Greenhill, King's Norton. Mr. ROBERT GODFREY, Engineer. Quantities supplied.

|                                 |        |    |   |
|---------------------------------|--------|----|---|
| Heaps, Birmingham               | £7,234 | 13 | 4 |
| Curral & Lewis, Birmingham      | 6,926  | 5  | 0 |
| White, Handsworth               | 6,755  | 6  | 6 |
| Pearson & Golightly, Birmingham | 6,754  | 8  | 7 |
| Cooke & Co., Battersea          | 6,722  | 7  | 4 |
| Law, Kidderminster              | 5,701  | 18 | 7 |
| BIGGS, Handsworth (accepted)    | 5,490  | 1  | 9 |
| Engineer's estimate             | 6,121  | 15 | 0 |

**LEEDS.**

For Providing and Fixing Warming Apparatus at Nippet Lane School, Leeds.

|                    |      |   |   |
|--------------------|------|---|---|
| OLDROYD (accepted) | £310 | 0 | 0 |
|--------------------|------|---|---|

**LONDON.**

For Completion of the Paddington Infirmary, Harrow Road, for the Guardians of the Poor of the Parish of Paddington. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities supplied.

|                    |        |   |    |
|--------------------|--------|---|----|
| Bray & Pope        | £7,500 | 0 | 0  |
| Garlick            | 7,163  | 0 | 0  |
| Josolyne           | 6,755  | 0 | 0  |
| Hilby & Gayford    | 6,722  | 0 | 0  |
| Marten             | 6,711  | 2 | 2  |
| Higgs              | 6,250  | 0 | 0  |
| Shurmur            | 5,940  | 0 | 0  |
| Longley            | 5,917  | 3 | 11 |
| Howell & Son       | 5,800  | 0 | 0  |
| JOHNSON (accepted) | 5,360  | 0 | 0  |

For Heating the Shropshire and North Wales Eye, Ear, and Throat Hospital, Murivance, Shrewsbury.

|  |  |  |  |
|--|--|--|--|
| BACON & Co., London (accepted).                  |  |  |  |
| For Heating St. Agnes Church, Liverpool.         |  |  |  |
| BACON & Co., London (accepted).                  |  |  |  |
| For Heating Lisburn Cathedral, Lisburn, Ireland. |  |  |  |
| BACON & Co., London (accepted).                  |  |  |  |



**LONDON—continued.**

For Proposed Extension of the Jews' Infant School, Commercial Street, Whitechapel, E., for the Jews' Infant School Committee. Messrs. DAVIS & EMANUEL, Architects, 2 Finsbury Circus, City, E.C. Quantities supplied by Mr. H. P. Foster, 5 John Street, Adelphi, W.C.

|                             |        |   |   |
|-----------------------------|--------|---|---|
| Clarke & Bracey . . . . .   | £3,816 | 0 | 0 |
| Colls & Sons . . . . .      | 3,680  | 0 | 0 |
| Williams & Sons . . . . .   | 3,667  | 0 | 0 |
| Gentry . . . . .            | 3,590  | 0 | 0 |
| Grover . . . . .            | 3,548  | 0 | 0 |
| Jerrard . . . . .           | 3,484  | 0 | 0 |
| Conder . . . . .            | 3,430  | 0 | 0 |
| Lawrance & Sons . . . . .   | 3,325  | 0 | 0 |
| HARRIS & WARDROP (accepted) | 3,293  | 0 | 0 |

**MAIDSTONE.**

For Restoration of 'All Saints' Church, Maidstone.

*Whole of Works.*

|                             |         |   |   |
|-----------------------------|---------|---|---|
| Pryer & Co. . . . .         | £13,990 | 0 | 0 |
| Elmore . . . . .            | 11,323  | 0 | 0 |
| Shillitoe . . . . .         | 10,795  | 0 | 0 |
| Naylar & Son . . . . .      | 10,325  | 0 | 0 |
| Vaughan . . . . .           | 9,947   | 0 | 0 |
| Cornish & Gaymer . . . . .  | 9,336   | 0 | 0 |
| Wallis & Clements . . . . . | 9,242   | 0 | 0 |
| Bunning . . . . .           | 8,250   | 0 | 0 |

*Nave and Aisles.*

|                             |       |   |   |
|-----------------------------|-------|---|---|
| Pryer & Co. . . . .         | 8,381 | 0 | 0 |
| Shillitoe . . . . .         | 6,730 | 0 | 0 |
| Elmore . . . . .            | 6,445 | 0 | 0 |
| Naylar & Son . . . . .      | 6,100 | 0 | 0 |
| Vaughan . . . . .           | 5,768 | 0 | 0 |
| Cornish & Gaymer . . . . .  | 5,478 | 0 | 0 |
| Wallis & Clements . . . . . | 5,243 | 0 | 0 |
| Bunning . . . . .           | 5,190 | 0 | 0 |

*Chancel Aisles.*

|                             |       |   |   |
|-----------------------------|-------|---|---|
| Pryer & Co. . . . .         | 1,391 | 0 | 0 |
| Shillitoe . . . . .         | 1,075 | 0 | 0 |
| Cornish & Gaymer . . . . .  | 1,026 | 0 | 0 |
| Elmore . . . . .            | 976   | 0 | 0 |
| Wallis & Clements . . . . . | 882   | 0 | 0 |
| Vaughan . . . . .           | 825   | 0 | 0 |
| Bunning . . . . .           | 810   | 0 | 0 |

**MAIDSTONE—continued.***Chancel.*

|                             |       |   |   |
|-----------------------------|-------|---|---|
| Pryer & Co. . . . .         | 4,025 | 0 | 0 |
| Elmore . . . . .            | 3,548 | 0 | 0 |
| Naylar & Son . . . . .      | 3,280 | 0 | 0 |
| Vaughan . . . . .           | 3,031 | 0 | 0 |
| Wallis & Clements . . . . . | 2,933 | 0 | 0 |
| Cornish & Gaymer . . . . .  | 2,447 | 0 | 0 |
| Shillitoe . . . . .         | 2,440 | 0 | 0 |
| Bunning . . . . .           | 2,030 | 0 | 0 |

*Heating Vault.*

|                             |     |   |   |
|-----------------------------|-----|---|---|
| Shillitoe . . . . .         | 550 | 0 | 0 |
| Bunning . . . . .           | 220 | 0 | 0 |
| Pryer & Co. . . . .         | 192 | 0 | 0 |
| Cornish & Gaymer . . . . .  | 185 | 0 | 0 |
| Wallis & Clements . . . . . | 184 | 0 | 0 |
| Elmore . . . . .            | 154 | 0 | 0 |
| Naylar & Son . . . . .      | 130 | 0 | 0 |
| Vaughan . . . . .           | 120 | 0 | 0 |

*Contingencies.*

|                            |     |   |   |
|----------------------------|-----|---|---|
| Cornish & Gaymer . . . . . | 200 | 0 | 0 |
| Vaughan . . . . .          | 200 | 0 | 0 |
| Elmore . . . . .           | 200 | 0 | 0 |

Mr. Bunning's contract for the nave, aisles, and heating apparatus was accepted, on condition that the committee had the option for three months of accepting the tender of Mr. Bunning for the remaining work—the chancel and chancel aisles.

**MARPLE.**

For the Construction of Sewer (200 yards), Church Street, Marple. Mr. H. WYATT, Surveyor, Marple.

|                                 |     |    |   |
|---------------------------------|-----|----|---|
| Benninson, Romiley . . . . .    | £56 | 0  | 0 |
| Cunningham, Marple . . . . .    | 54  | 10 | 0 |
| Pott, Marple . . . . .          | 50  | 0  | 0 |
| HIGGINBOTTOM, Marple (accepted) | 49  | 10 | 0 |
| Surveyor's estimate . . . . .   | 57  | 0  | 0 |

**NOTTINGHAM.**

For Engine, Boiler, Shafting, Steam Piping, &c., for new Lace Mill, New Basford, Nottingham. Mr. SIDNEY R. STEVENSON, Architect, Nottingham.

GODDARD & MASSEY, Engineers, Nottingham (accepted). . £1,889 0 0

**NEWARK.**

For Building Shop and Premises, Market Place, Newark. Mr. GEO. SHEPPARD, Borough Surveyor.

|                                 |      |    |   |
|---------------------------------|------|----|---|
| Wilson, East Retford . . . . .  | £633 | 0  | 0 |
| Lane, Newark . . . . .          | 629  | 0  | 0 |
| Cosham, Newark . . . . .        | 590  | 0  | 0 |
| Smith & Lum, Newark . . . . .   | 563  | 0  | 0 |
| Baines, Newark . . . . .        | 550  | 0  | 0 |
| Whate, Newark . . . . .         | 535  | 0  | 0 |
| Duke, Newark . . . . .          | 532  | 12 | 0 |
| Wignall, Newark . . . . .       | 525  | 0  | 0 |
| BROWN & SONS, Newark (accepted) | 480  | 0  | 0 |

**OTTERY ST. MARY.**

For Construction of Reservoirs and Works in connection with the Water Supply, Ottery St. Mary. Mr. J. M. MARTIN, C.E., Castle Chambers, Exeter.

|                                   |        |    |    |
|-----------------------------------|--------|----|----|
| Gibson, Exeter . . . . .          | £1,675 | 0  | 0  |
| Ambrose & Son, Bath . . . . .     | 1,350  | 0  | 0  |
| Hawkins, Dawlish . . . . .        | 1,321  | 10 | 0  |
| Williams, Exmouth . . . . .       | 1,186  | 14 | 10 |
| CARNELL, Ottery (accepted)        | 1,033  | 0  | 0  |
| Hawking & Best, Dawlish . . . . . | 869    | 0  | 0  |

\* No Schedule.

**READING.**

For Alterations to the Premises lately known as the Berkshire Brewery, situate in King Road, Reading, for Messrs. J. S. Salmon & Son, Tea Merchants. Messrs. BROWN & ALBURY, Architects.

|                             |        |   |   |
|-----------------------------|--------|---|---|
| Woodroffe . . . . .         | £1,757 | 0 | 0 |
| Kingerlee . . . . .         | 1,640  | 0 | 0 |
| Wernham . . . . .           | 1,500  | 0 | 0 |
| Higgs . . . . .             | 1,477  | 0 | 0 |
| Bottrill . . . . .          | 1,450  | 0 | 0 |
| Searle . . . . .            | 1,414  | 0 | 0 |
| DENTON (accepted) . . . . . | 1,353  | 0 | 0 |

Engineers' Work-lift, Hoist, Hot-water Service, and Machinery.

|                             |     |   |   |
|-----------------------------|-----|---|---|
| DEACON (accepted) . . . . . | 450 | 0 | 0 |
|-----------------------------|-----|---|---|

**ST. ALBANS.**

For Works to Culver Road, St. Albans.

|                              |      |   |   |
|------------------------------|------|---|---|
| DICKSON (accepted) . . . . . | £306 | 0 | 0 |
|------------------------------|------|---|---|

Six Tenders were received.

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(REGD)

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**RICHMOND.**For Building Sheds in Parish Yard, Richmond,  
Surrey. Mr. W BROOKE, Town Surveyor.**Contract No. 1.**

|                                    | Tender No. 1. |
|------------------------------------|---------------|
| Steere . . . . .                   | £165 0 0      |
| Carless & Co. . . . .              | 109 0 0       |
| Carman . . . . .                   | 90 0 0        |
| SWEET & LODER (accepted) . . . . . | 86 17 0       |
|                                    | Tender No. 2. |
| Steere . . . . .                   | 95 0 0        |
| Carless & Co. . . . .              | 57 0 0        |
| SWEET & LODER (accepted) . . . . . | 57 0 0        |
| Carman . . . . .                   | 49 0 0        |

**Contract No. 2.**

|   | Tender No. 1.<br>Zinc Roof.       |
|---|-----------------------------------|
| Sweet & Loder . . . . .                     | 37 0 0                            |
| PIERCE (CARLESS & Co.) (accepted) . . . . . | 37 0 0                            |
| Sims . . . . .                              | 35 0 0                            |
|   | Tender No. 2.<br>Galvanised Roof. |
| Sims . . . . .                              | 28 10 0                           |
| Sweet & Loder . . . . .                     | 27 0 0                            |
| PIERCE (CARLESS & Co.) (accepted) . . . . . | 27 0 0                            |

**Contract No. 3.**

|  |          |
|--|----------|
| Hawkins, Richmond . . . . .                  | £385 0 0 |
| Collings & Son, Richmond . . . . .           | 312 15 0 |
| Eldridge, Richmond . . . . .                 | 285 0 0  |
| Sims, Richmond . . . . .                     | 270 0 0  |
| Pennington, Richmond . . . . .               | 266 0 0  |
| Sweet & Loder, Richmond . . . . .            | 265 0 0  |
| Maton, Kew . . . . .                         | 249 0 0  |
| CARLESS & Co., Richmond (accepted) . . . . . | 243 0 0  |

**RYDAL.**For Building Chancel, Rydal Church. Mr.  
ROBERT WALKER, Architect, Windermere.  
Quantities by the Architect.**Accepted Tenders.**Hawkins & Jackson, Ambleside, mason.  
Dixon, Ambleside, carpenter and joiner,  
plumber, plasterer, and painter.**SANDAL MAGNA.**For Constructing and Fixing a 3-foot 8-inch  
Galvanised-iron Water Wheel, Cast-iron  
Mixer, and Wood Hopper at the Sandal  
Magna Sewage Outfall Works. Mr.  
CRUTCHLEY, Engineer, Town Hall Cham-  
bers, Wakefield.

|                            |          |
|----------------------------|----------|
| Nelson & Sons . . . . .    | £105 0 0 |
| Hawden . . . . .           | 75 15 6  |
| Bradley & Co. . . . .      | 65 18 0  |
| Bradley & Crusen . . . . . | 53 0 0   |
| TEALE (accepted) . . . . . | 50 0 0   |

All of Wakefield.

**SMALLBURGH.**For Repairs and Draining Works at Smallburgh  
Workhouse, Norwich Union. Mr. J. B.  
PEARCE, Architect, Surrey Street, Nor-  
wich.

|                                     |            |
|-------------------------------------|------------|
| Evans, South Walsham . . . . .      | £1,630 0 0 |
| Baldwin, Smallburgh . . . . .       | 1,385 0 0  |
| Welden, Swanton Abbott . . . . .    | 1,180 0 0  |
| Lacey, Norwich . . . . .            | 1,175 0 0  |
| Wilson, North Walsham . . . . .     | 1,087 10 0 |
| Eastoe, North Walsham . . . . .     | 999 0 0    |
| HAWES, Norwich (accepted) . . . . . | 720 0 0    |

**SOUTH SHIELDS.**For Extension of the 18-inch Pipe Sewer in  
Stainton Street. Mr. M. HALL, Borough  
Engineer, South Shields.

|  |           |
|--|-----------|
| Murphy, Byker . . . . .                  | £237 19 0 |
| Craig, South Shields . . . . .           | 165 0 0   |
| HORNSBY, S. Shields (accepted) . . . . . | 117 18 0  |

**STOURBRIDGE.**For Works on Sewage Farm, for the Main  
Drainage Board, Stourbridge.

|  |             |
|--|-------------|
| Hughes, Gornal . . . . .                           | £1,089 17 9 |
| Guest, Stourbridge . . . . .                       | 1,072 0 6   |
| Laws, Kidderminster . . . . .                      | 1,066 1 3   |
| Horton, Brierley Hill . . . . .                    | 1,050 11 5  |
| Jevons, Dudley . . . . .                           | 1,001 2 3   |
| Young, London . . . . .                            | 958 4 8     |
| DORSE & SON, Cradley Heath<br>(accepted) . . . . . | 943 11 4    |

**TOTTENHAM.**For Construction of Sewer from the Intercept-  
ing Sewer in Markfield Road to Junction of  
Lordship Lane with High Road, Tottenham.  
Mr. DE PAPE, Surveyor. Quantities by  
Messrs. J. S. Lee & Son, Craven Street,  
Strand.

|  |             |
|--|-------------|
| Prowse & Lee, Broad Street<br>Buildings . . . . .    | £10,268 0 0 |
| Pizzey, Hornsey . . . . .                            | 8,747 0 0   |
| M'Kenzie & Co., Finsbury . . . . .                   | 8,955 0 0   |
| Botterill, 110 Cannon Street<br>(informal) . . . . . | 8,791 0 0   |
| Bottoms Bros., Lavender Hill . . . . .               | 8,681 0 0   |
| Cowderry, Newent . . . . .                           | 8,315 0 0   |
| Stone, Tottenham . . . . .                           | 8,129 11 0  |
| Taylor, Holloway . . . . .                           | 7,949 19 0  |
| Schofield, Bucklersbury, E.C. . . . .                | 7,300 0 0   |
| Bell, Tottenham . . . . .                            | 6,776 0 0   |
| Cooke & Co., Battersea . . . . .                     | 6,682 0 0   |
| Nowell & Robson, Kensington . . . . .                | 6,273 0 0   |
| BLOOMFIELD, Tottenham (ac-<br>cepted) . . . . .      | 5,776 1 5   |
| Surveyor's estimate . . . . .                        | 6,876 0 0   |

**TWERTON.**For Providing Lightning Conductor to Tower  
of St. Peter's Church, Twerton, Bath.  
Messrs. HAYWARD & SON, Architects,  
Exeter.

|                               |         |
|-------------------------------|---------|
| Sanderson & Son . . . . .     | £83 0 0 |
| Grey & Sons, London . . . . . | 48 0 0  |

**WIGSTON.**

For Building Wesleyan Chapel, Wigston.

|   |            |
|---|------------|
| Mason, Leicester . . . . .              | £1,342 0 0 |
| Newby, Leicester . . . . .              | 1,217 0 0  |
| Stevens, Leicester . . . . .            | 1,190 0 0  |
| Bass, Leicester . . . . .               | 1,184 0 0  |
| Woodcock, Leicester . . . . .           | 1,174 0 0  |
| Hewitt, Leicester . . . . .             | 1,170 0 0  |
| Hurst, Wigston . . . . .                | 1,169 0 0  |
| Brown, Wigston . . . . .                | 1,135 0 0  |
| Wright, Wigston . . . . .               | 1,100 0 0  |
| Jewsbury, Leicester . . . . .           | 1,095 0 0  |
| JOHNSON, Leicester (accepted) . . . . . | 1,010 0 0  |

# EASTWOOD & CO. (LIMITED).

## LIME, CEMENT, AND BRICK MANUFACTURERS.

**SHOEBURY, COWLEY, & KENT BRICKS IN ANY QUANTITY DELIVERED ALONGSIDE.**

|  |                                       |                                       |                             |
|--|---------------------------------------|---------------------------------------|-----------------------------|
| Shoebury Malm Facings and Paviers.     | Dutch, Adamantine, and Red English    | Laths, Plaster.                       | Ridge Tiles, Terminals, &c. |
| Stourbridge, Welsh, and Newcastle Fire | Clinkers.                             | Moulded Bricks of all kinds.          | Staffordshire Blue Bricks.  |
| Bricks, &c.                            | Red and White Suffolk Bricks.         | Red, White, and Black Rubbers.        | Chimney Pots, Slates.       |
| Glazed and other Drain Pipes.          | Greystone, Blue Lias, and Chalk Lime. | Broseley and Yorkshire Roofing Tiles. | Hair, Sand, &c. &c.         |

**PORTLAND CEMENT**

(WELLINGTON BRAND) of Unsurpassed Quality.

Sole London Consignees of Messrs. Gibbs & Co.'s (West Thurrock) PORTLAND CEMENT, and the LUMLEY  
GLAZED BRICKS.**BRICKFIELDS:—WEST DRAYTON, MIDDLESEX; SITTINGBOURNE, KENT.****WHARFS:—**

WELLINGTON WHARF, BELVEDERE ROAD, LAMBETH.

CANAL BRIDGE WHARFS, OLD KENT ROAD, S.E.

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KENSAL GREEN, HARROW ROAD.

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Having Established themselves in their New Manufacturing Premises, which are the largest Tile Works in existence—replete with all the newest Machinery and Appliances, directly connected with the Great Western Railway by a private siding, and adjacent to their Clay Mines—announce the Reduction in Price of their **BEST** Plain Red, Black, Buff, Chocolate, and Grey Tiles and Geometrical Mosaic Pavements, of unequalled hardness and general quality, from 6s. a yard to

**FIVE SHILLINGS A YARD.**

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# WENHAM & WATERS'

# PATENT RADIATORS

FOR

## HOT-WATER HEATING APPARATUSES.

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The purpose of this invention is to improve upon the present system of heating by hot water. The object of the invention is to retain the largest outside radiating surface with the smallest possible quantity of water compatible with simplicity of construction.

The pipe of the illustration (see page xxi), instead of being of the usual circular shape, is of a cruciform pattern, and represents the same outside surface as an ordinary 4-inch cast-iron hot-water pipe; but by its construction the internal bore is only equal to the size of 1½-inch round pipe. By containing only the smallest quantity of water an enormous saving of fuel is effected, inasmuch as only about one-sixth part of the quantity of water has to be heated; and having this smaller quantity of water only to deal with, the water circulates through the entire system six times quicker than with the ordinary circular pipes, and by so doing a more regular and even temperature can be maintained.

The pipe is made so as to be adapted for coils as illustrated (see page xxi), or to be connected together by means of a flange for fixing in trenches or continuous run of pipe, as is ordinarily done for greenhouses or churches. When it is used above ground as a coil it can be finished, ground, and Berlin-blackened or electro-bronzed, or in other modes to suit different styles of decoration and architecture, and is capable of being made an ornamental object, occupying but little space, instead of the unsightly disfigurement of the ordinary pipes, which have to be covered with expensive coil cases.

---

The following are among the advantages of the Cruciform Pipe and Radiator:—

**FIRST COST IS NOT ABOVE THAT OF ORDINARY PIPES.**

**A SAVING OF AT LEAST 50 PER CENT. IN FUEL.**

**MAIN FLOW AND RETURN PIPES MAY BE MUCH SMALLER THAN WITH ORDINARY PIPES.**

**SMALLER, AND CONSEQUENTLY LESS EXPENSIVE; VALVES MAY BE USED.**

**SMALLER BOILERS REQUIRED, WITH A SAVING OF BRICKWORK IN THE SETTING.**

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# WENHAM & WATERS,

Hot Water, Sanitary, and Domestic Engineers,

## PARAGON WORKS, CROYDON, SURREY.

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*Plans and Estimates submitted for Heating and Ventilating Public Buildings, Churches,  
Mansions, Greenhouses, &c.*



# TRELOAR'S SEAMLESS CARPETS.

## CHEVIOT CARPETS

Are made and kept in Stock in the following  
Sizes, in all Colourings, all Wool,  
Fringed, and Bordered.

|                               | £ | s. | d. |
|-------------------------------|---|----|----|
| 8ft. 6in. by 7ft. 0in. ....   | 1 | 1  | 0  |
| 9ft. 0in. by 7ft. 6in. ....   | 1 | 6  | 0  |
| 10ft. 0in. by 7ft. 6in. ....  | 1 | 9  | 0  |
| 10ft. 0in. by 9ft. 0in. ....  | 1 | 15 | 0  |
| 11ft. 0in. by 9ft. 0in. ....  | 1 | 18 | 6  |
| 12ft. 0in. by 9ft. 0in. ....  | 2 | 2  | 0  |
| 12ft. 0in. by 10ft. 6in. .... | 2 | 9  | 0  |
| 12ft. 0in. by 12ft. 0in. .... | 2 | 16 | 0  |
| 13ft. 6in. by 10ft. 6in. .... | 2 | 15 | 0  |
| 13ft. 6in. by 12ft. 0in. .... | 3 | 3  | 0  |
| 15ft. 0in. by 10ft. 6in. .... | 3 | 2  | 6  |
| 15ft. 0in. by 12ft. 0in. .... | 3 | 5  | 0  |
| 15ft. 0in. by 12ft. 0in. .... | 3 | 10 | 0  |

Any length in the above widths made to order.

The *Queen* says:—"The writer of this note has had a year's experience of Cheviot Carpets, and finding them wear well and look well, has every reason to be satisfied."

## THE PAISLEY.

ANOTHER SPECIALITY IN SEAMLESS CARPETS.

|                               |    |    |   |
|-------------------------------|----|----|---|
| 10ft. 6in. by 9ft. 0in. ....  | £2 | 2  | 0 |
| 12ft. 0in. by 9ft. 0in. ....  | 2  | 8  | 0 |
| 13ft. 6in. by 10ft. 0in. .... | 3  | 0  | 0 |
| 14ft. 0in. by 11ft. 0in. .... | 3  | 10 | 0 |
| 15ft. 0in. by 12ft. 0in. .... | 4  | 0  | 0 |

These carpets are in texture and appearance very similar to Brussels. They are made in various patterns, only in the above sizes at present.

## AXMINSTER CARPETS.

|                               |    |    |   |
|-------------------------------|----|----|---|
| 10ft. 0in. by 7ft. 0in. ....  | £5 | 5  | 0 |
| 11ft. 0in. by 9ft. 0in. ....  | 7  | 10 | 0 |
| 13ft. 0in. by 10ft. 0in. .... | 9  | 10 | 0 |
| 14ft. 6in. by 11ft. 2in. .... | 12 | 12 | 0 |

Full thick pile, BEST QUALITY, various patterns and colourings, large assortment.

Axminster carpets made in various patterns, any size, bordered all round, with or without seams.

WILTON CARPETS, made with or without border to fit any room, or in squares any size.

## SHETLAND CARPETS.

THESE ARE QUITE NEW, AND

CANNOT BE OBTAINED ELSEWHERE.

|                               | £ | s. | d. |
|-------------------------------|---|----|----|
| 9ft. 0in. by 7ft. 6in. ....   | 1 | 15 | 9  |
| 9ft. 0in. by 9ft. 0in. ....   | 2 | 2  | 0  |
| 10ft. 0in. by 9ft. 0in. ....  | 2 | 7  | 6  |
| 11ft. 0in. by 9ft. 0in. ....  | 2 | 12 | 9  |
| 12ft. 0in. by 9ft. 0in. ....  | 2 | 17 | 0  |
| 13ft. 0in. by 9ft. 0in. ....  | 3 | 2  | 6  |
| 12ft. 0in. by 10ft. 6in. .... | 3 | 6  | 6  |
| 12ft. 0in. by 12ft. 0in. .... | 3 | 16 | 0  |
| 13ft. 6in. by 12ft. 0in. .... | 4 | 5  | 6  |
| 15ft. 0in. by 12ft. 0in. .... | 4 | 15 | 0  |

These Carpets are all wool, and are made and kept in stock in various new and artistic designs in all the above sizes. They are as heavy as Brussels Carpets, and will certainly wear longer than many of the so-called "Best Brussels."

TRELOAR'S CATALOGUE OF ALL THE BEST FLOOR COVERINGS POST FREE.

### COCOA-NUT FIBRE MATTING.

The *Art Journal* says:

"The Treloar Cocoa-nut Fibre Matting and Mats may claim for them a place of honour of their own amidst the Art manufactures of our day. The only sort that will wear well. As laid at Her Majesty's Palaces and Public Buildings."

## TRELOAR'S

3s. 3d. per Yard.

3s. 6d. per Yard.

3s. 9d. per Yard.

4s. 0d. per Yard.

4s. 3d. per Yard.

4s. 6d. per Yard.

5s. 0d. per Yard.

## BRUSSELS

## CARPETS.

SPECIAL IN DESIGN AND QUALITY.

### MATS.

TRELOAR'S IMPERIAL MATS.

TRELOAR and SONS are the manufacturers of the Imperial Mats. They are made entirely of Coir, or Cocoa-nut Fibre, and without the use of any dye or bleach. Skeleton, Union, Indiarubber, and Scraper Mats in great variety. The patent Mat and Foot Brush, a novel combination.

### TRELOAR'S FLOOR-CLOTH

ALL WELL SEASONED AND OF THE  
NEWEST ARTISTIC DESIGNS.

"Well seasoned" as applied to floor-cloth is not an unmeaning term, for good floor-cloth, like good wine, requires age.

A vast improvement has taken place lately in the patterns, and many of these are now everything that can be desired.

### TRELOAR'S LINOLEUM.

Like ordinary floor-cloth, Linoleum requires age, and when properly seasoned will wear a long time. The ground is brown or red, with a large assortment of patterns. Linoleum is made two yards wide, but can be fitted together so as to present an unbroken surface. All the Linoleum by other makers is kept in stock. Experienced fitters sent to any part.

TRELOAR and SONS have been awarded NINE PRIZE MEDALS for their FLOOR COVERINGS—the first at the INTERNATIONAL EXHIBITION, 1851, and the last at the HEALTH EXHIBITION, 1884.

# THE GUINEA CARPET,

"THE CHEVIOT,"

Is all Wool, is nearly 3 yards by 2½, is Seamless and bordered all round. Kept in stock in every variety of pattern and colouring, in twenty other sizes. Protected by Trade Mark ("THE CHEVIOT,") and only to be obtained from

**TRELOAR & SONS.**

THREE MEDALS ONLY were awarded at the Health Exhibition for ENGLISH CARPETS,

**GOLD. SILVER. BRONZE.**

THESE THREE PRIZE MEDAL CARPETS CAN BE SEEN AT

**TRELOAR & SONS, 68, 69, 70 LUDGATE HILL, E.C.**



# The Architect.

## THE WEEK.

THE death of the Bishop of LONDON, which occurred rather suddenly on Tuesday morning, will cause general regret. Bishop JACKSON was not more enthusiastic about church building than about other matters, but he was eager enough to have churches built in new districts, and to attain that end he was willing to sacrifice City churches. His apparent indifference to the architectural interest of buildings for which a congregation could not be found was the cause of much expostulation with his lordship. Bishop JACKSON presided over the See of London during fifteen years, and in that time he has consecrated one hundred and fourteen new churches, of which twenty-nine were erected in the last five years. In his last charge the bishop said that fifty additional churches were still required for the metropolis, and that sites for thirty had been secured.

THE new year always brings additions to the Legion of Honour. The representatives selected by the Minister of Fine Arts for January 1885 have been M. PAUL ARÈNE, M. MARQUESTE, sculptor, and MM. GABRIEL FERRIER and LHERMITTE, painters. Architecture has not been recognised in the nominations this year, unless M. TOULIN, director of civil buildings, is considered. Engineering is honoured in the person of M. MARIN, Ingénieur en chef des Ponts et Chaussées, who for thirty years has been connected with the Western Railway Company.

MR. H. GIBSON, of North Shields, has obtained first place in the competition for the Tynemouth Workhouse Extension. The second premium of 20*l.* was awarded to Messrs. CLARK & MOSCROP, architects, of Darlington. The amount to be expended is not to exceed 20,000*l.*

It is not surprising that exaggerated rumours have been heard about the destruction of buildings in Spain by the earthquake. In Malaga there have been settlements in several of the churches, and buildings in Beznar, Langaron, and Murchas have suffered. But it appears there is no reason to believe that more than the slightest injury has arisen either to the Alhambra in Granada, or the great Giralda tower of Seville Cathedral, although statements to the contrary have been printed in foreign papers. The town of Alhama, on the borders of the province of Granada, which is associated with Moorish history and legends, has been nearly all destroyed.

A CASE which suggests the risks of architects has been just settled in Stratford-on-Avon. The School Board erected a building from plans which had been prepared by Mr. MILNE, a local architect, and were duly approved by the Education Department. The contractor was Mr. HARRIS, of Stratford-on-Avon, and a clerk of works was employed. On the completion of the building, the architect gave a certificate declaring that the work had been properly carried out according to the drawings and specification. There are always honorary inspectors for a public building, and the report was spread in the town that the contractor had contrived to evade some of the conditions. An independent architect was called in to report on the case, and the Board came to the conclusion that nearly 400*l.* had been overpaid owing to the difference between the specified materials and those which had been used. The Board declined to pay the balance which was claimed. An action was commenced by the contractor, and as he was in possession of the architect's certificate it would be difficult to resist his claim. A compromise was effected, which will be understood from the following resolution, which was adopted at the last meeting:—"Resolved, that the Board accept the offer of Mr. MILNE of 200*l.* cash in full discharge of all liabilities, upon condition that the Board are released from payment of 145*l.* 3*s.* 2*d.* stated to be due from them to the contractor, Mr. HARRIS, being equivalent to the sum of 345*l.* 3*s.* 2*d.* paid to the Board." To the ratepayers this may seem a satisfactory conclusion; but, on public grounds it is to be regretted that the case has not been fought out.

The charge is nothing short of a slur on architects and builders throughout the country, for it will be alleged that misdeeds in other places have escaped owing to absence of watchful members on the School Boards. When a prejudice arises against an architect or a builder it is difficult to live it down, and we believe that Mr. MILNE and Mr. HARRIS would have found it better in the end if they had succumbed to clamour.

WE are glad to find that a suggestion that was lately offered in this journal will be realised, as Professor G. BALDWIN BROWN has received a commission from the Science and Art Department to prepare a translation of SEMPER's book on "Style." There can be no question about the Professor's qualifications to undertake the work. The extract in his article on SEMPER is evidence that the translation will be idiomatic and readable. The appearance of the book under the auspices of the Science and Art Department will aid in extending the influence of SEMPER's teaching, and it will be also a memorial of his connection with the Government Art Schools.

THE ordinary Wednesday evening meetings of the Society of Arts will recommence on the 14th inst., when Mr. R. H. TWEDDELL will read a paper on "The Employment of Hydraulic Machinery in Engineering Workshops." The following are the papers arranged for subsequent evenings:—January 21, "Labour and Wages in the United States," by Mr. D. PIDGEON. (On this occasion the Hon. J. RUSSELL LOWELL, the American Minister, will take the chair.) January 28, "The Influence of Civilisation upon Eyesight," by Mr. R. BRUDENELL CARTER, F.R.C.S.; "The History and Manufacture of Playing Cards," by Mr. GEORGE CLULOW; "The Musical Scales of Various Nations," by Mr. A. J. ELLIS, F.R.S.; "A Marine Laboratory as a means of Improving Sea Fisheries," by Prof. E. RAY LANKESTER, F.R.S.; "Recent Improvements in Coast Signals," by Sir J. N. DOUGLASS; "The Evolution of Machines," by Prof. H. S. HELE SHAW; "Education in Industrial Art," by Mr. CHARLES E. LELAND; "The American Oil and Gas Fields," by Prof. JAMES DEWAR, F.R.S.; "Past and Present Methods of Supplying Steam Boilers with Water," by Mr. W. D. SCOTT MONCRIEFF.

IN an article on the building trade which appeared last week we spoke of prejudices against building as an investment, the subject being considered solely on financial grounds, and with ample knowledge of what is now believed in the City. What was then said has been confirmed in the suspension of Mr. ARTHUR SMITH, a contractor who is well known from the extent of his building operations in the suburbs of the metropolis. A man of his shrewdness is hardly likely to have been carried away by a desire to build houses for the public benefit at a great loss to himself, and a valuation of his property has shown that it can realise a large surplus, even under the unfavourable conditions of a forced sale. Several of Mr. SMITH's principal creditors entertained the fullest confidence in his transactions, and were willing to allow the business to be continued. But the influences to which we referred last week operated among a few creditors, and in consequence a splendid property, with a well-managed establishment, have to be brought into the Bankruptcy Court. From what we can infer this course is altogether unnecessary, and will involve needless expense to the creditors. Mr. ARTHUR SMITH well merits the sympathy of all business men. He has been sacrificed to what is practically a senseless panic, and it is to be hoped that he may not have many fellow-sufferers in the building trade.

THE Municipal Council of Paris have this year voted liberal sums for education in art and science. Drawing comes first with a credit of 974,900 frs. Then there is singing, which costs 281,759 frs. The schools of physics and chemistry, as applied to industry, cost 204,200 frs., the professional school in the Boulevard Diderot 141,920 frs., and the technical school in the Rue de Reuilly 92,300 frs. A sum of 4,000 frs. is entered for travelling scholarships in art. Gymnastics is credited with 322,000 frs. These sums form but a part of the outlay on science and art.



## THE EDUCATION OF ARCHITECTS.

ALTHOUGH the human race has been occupied with experiments in education for three or four thousands of years, it has not yet been able to determine what is the best way to bring up a boy or a girl. Every paterfamilias cannot fail at times to contrast the difference between the system which is found in his son's school, and that which prevailed in his day, and periodically when he glances over the "extras" in the accounts, he probably is not convinced of the advantages of the former. For years past revolutions have been in progress in all places for education, from universities to reformatories, and there are no signs that they will ever come to an end. Science schools, medical schools, law schools, art schools, have all become dissatisfied with established methods, and are seeking for something of a different kind. Even theology, which is not a progressive science, has come under the power of the reforming spirit, and things are now considered to be essential in the ecclesiastical curriculum, which were entirely unknown to old-fashioned divines.

It is not surprising, then, that the Architectural Association should devote an evening to professional education. That is a subject which has been often ventilated in Conduit Street, but it is well that the younger generation should have an opportunity to express their opinion upon it. Many members of the Association must be just beginning to realise that their dream is over. Architecture may have appeared to them a very attractive profession, and during their days of pupilage they, like men who are now grisly and cynical, imagined probably that they were about to astonish the world. But the commissions for the palaces and cathedrals will not come, and as one sits lonely in a small office on a winter's day, it is difficult to believe that one's training has been exactly of the kind that is best adapted to cope with an obtuse generation. When education is to be considered, it would be well to have the opinions not only of the young men who are beginning to test the worth of their pupilage, but of youths whose terms have not yet expired. We should have liked to have heard the objections that could be raised by those who have had, say a year's experience. When we have once gone into the world, it is not easy to say in public that we represent a defective plan of education, or to confess that we have been allowed few opportunities to see works in execution. But a pupil could, without injury to himself, rise and say that he has not had a word of advice from his master, or that his time is mainly occupied in tracing drawings, and whatever he might reveal in this way could not injure him hereafter. It has been objected from time to time that the speakers at the Association meetings are hardly representative of what may be called the student class, and lately more encouragement has been given to tyros; but at such a meeting as the last the opinion of the youngest man in the room was entitled to serious consideration. It must be said, however, that the meeting was almost improvised, and while to a part of the auditors the question was what is the most efficient way to improve the Association, supposing the Institute is willing to advance funds, to others it was the vast subject of professional education in its entirety.

Either aspect of the case would require more space for consideration than an article will admit, and we therefore propose to bring it within very narrow limits. It seems to us that what is to be determined is simply how can the time which is spent as a pupil under an architect be best utilised. The education of an architect is, or should be, always in progress, and it is absurd to suppose that any period can be fixed when he has no more to learn. It is no less absurd to imagine that anyone can in three years from the time he has left school become an artist as regards design, and an engineer as regards construction. However acute may be a young man's intellect, there is a good deal about building which he cannot comprehend in so limited a period. The vagueness and confusion which are often supposed to represent neglect on the part of a master are a consequence of the extent of what has to be known, as compared with human powers. If some of our young friends are discontented when they find that they have still so much to acquire, they should not conclude that they have been cheated of time and money.

It must be allowed that there would be less disappointment if there was a clearer understanding as to what pupilage means. Parents and guardians appear to think that an architect's office is a sort of machine in which a raw youth enters, and in three years is turned out a finished architect. How far the process resembles school teaching is not considered. But it is unfair to master and pupil to suppose that there can be formal instruction during that term. What an office does is to initiate a pupil in the routine of business, which is something that he cannot purchase elsewhere. If he be incompetent to take advantage of his opportunities, the responsibility cannot well rest with the head of the office; and, on the other hand, the time which is spent in the office or on works does not dispense with the expenditure of very many hours over books and drawings, in lecture-rooms and museums. One part of the pupil's life should be complementary to the other, and the day's work in the office should be brought into relation with the quiet study of the preceding evening.

Too many become pupils without much consideration of their aptitude for the study of architecture. In the majority of cases school training is carried out with little or no regard to the future occupations of the students, and in the opinion of earnest and zealous teachers it cannot be otherwise. Youths are accordingly brought to architects' offices who hardly know more than the rudiments of science and mathematics, and who are unskilled in drawing. It is not surprising that before three years are expired, so many pupils begin to learn that the choice of a profession for them was not wisely inspired. In such cases, it would perhaps be better, as was proposed by Mr. MILLARD, that there should be annual arrangements, although with others it would lead to frequent inconvenience.

What appears to be required is a sort of intermediate school, conducted entirely by architects, in which intending pupils could test their fitness for the profession, and acquire the knowledge and dexterity which would enable them to utilise a three years' term in the most beneficial manner. The course of study should approach as near as possible to practice, although it should comprise a good deal of theory. In a school of the kind, the students need not be afraid to show their ignorance or to ask many questions, as often happens in offices, and it would be the duty of the teachers to devote themselves to the classes. At a time like the present, the experiment could well be made. There are many men in London who are qualified to undertake the work. We believe that it would pay well, and as it would relieve architects from trouble, it could hardly fail to obtain the support of the profession. If the school only served to keep young men out of architecture who are better adapted to work of another kind it would render a service to the public in general.

The existing system is not, however, likely to be immediately superseded, and the question is, How can it be rendered more efficacious? There is agreement that the office as a means of instruction must be supplemented in some form or other. As regards drawing, the ordinary art schools can be made to serve very well. They are so cheap that at one time an architect's pupil was almost ashamed to admit that he attended a Science and Art school of an evening. Indeed, the debt to the schools is not sufficiently acknowledged by artists. A more generous spirit begins to prevail, and unless better and cheaper instruction is available, every architect's pupil should attend the evening classes regularly. In architectural drawing as in other things, the first steps are the hardest, and it is not to be expected that a manager or a clerk can devote time to expounding all the mysteries that to the eyes of a novice are found in the majority of working drawings. It is preferable to sit beside a workman in a school (although men of that class are rare in the classes) than remain disqualified for anything better than tracing plans and copying specifications. Information is often required which is not to be had in art schools or elsewhere without difficulty. Would it not be an advantage if, in such a case, a pupil could obtain the information by payment? A student of an University can always find somebody a little older than himself, who is ready to act the part of a tutor for a longer or shorter term. In London men are to be found of high standing who will give an hour's lesson in mathematics, science, or language, in their specialty in fact, for a moderate



sum. Lawyers can find "grinders," so can medical students, and students preparing for promotion in the army. But while there are architects who are well fitted to give instruction to students, custom will not recognise any other way than by following the practice of pupilage. An idea of this kind must have been before the mind of Professor ROGER SMITH, when he spoke of the creation of a Student's Friend. It could not be expected that any man would have sufficient philanthropy for so onerous an office. What is requisite is, technical advice on occasions when a young fellow is in a difficulty about a drawing, or is puzzled over strains or details of style, or desires to have a series of lessons that will exactly meet his deficiencies. It will be said that information of the kind is to be picked up in the office. But everyone who has had experience knows that there are pupils who fear the "chaffing" that follows an avowal of ignorance, and thus, from a lack of moral courage, pupils become sufferers. It is this faith in the advantages of the "picking-up" system that has left so many men but half-finished architects.

One of the defects of the arrangements which are in force was touched upon when it was suggested that the carrying out of a lodge or other small work should be entrusted to a pupil. There is more than the acquirement of experience involved in the suggestion. To many pupils confinement in an office and bending from day to day over a drawing-board is punishment; there are others who take pleasure in the work. The energy of the former class often leads to successful practice, while students who are careful and useful in the office often end by remaining draughtsmen; and cases could be mentioned where the student became the assistant of the less useful fellow-pupil. In fact it is said that exceptional ability in any kind of office work is not to be desired by a pupil, for he is likely to be confined to that alone, and thus become an unpaid assistant. Besides, it often occurs that men who can do one thing well are supposed in time to be incompetent to do anything else. There are pupils who are out of their element in an office, yet they might become the men who are fitted not only to superintend works, but to resist claims on account of extra works. If they are kept for three years in a back office they have no chance of exhibiting their powers.

This leads us to another consideration. It is becoming more doubtful every day whether it is possible for any one brain to perform all the work that belongs to architectural practice. Art, science, construction, law are combined in the knowledge which an architect is expected to possess, and the encyclopaedical CRICHTON is only a Kindergarten pupil beside him. Nature will, however, have her own way, and she will not always let the artist who makes the picturesque design take delight in the laying of the drains, and the man who is "up" in ventilators, and can spend an hour watching a mason generally finds the "cooking" of a perspective rather difficult. Great as is Sir EDMUND BECKETT in law, lockmaking, astronomy, and building, he fails when he has to design a window. The great defect of English pupilage is that it does not recognise any difference in the capabilities of pupils. They are all supposed to be alike convertible into experts by means of an office. The routine which is followed out of doors is rarely known except by hearsay. The pupils, having no practical knowledge when they first appear, are kept away from every opportunity of acquiring it, and then they discover that they are not entrusted with work because they are without experience. One class of pupils who are at home in offices may be indifferent to so partial a training, but the second class will suffer. If any reform can be accomplished, it certainly should tend to the enlargement of the pupil's sphere of activity. Give him a chance of realising what is meant by out-of-doors work, and in many cases it will be found that the office work will have gained more interest and will be better executed.

We must confess that we have no faith in any specific which will make men architects in spite of themselves. Education is determined partly by native ability and partly by the amount of exertion any individual cares to make. In London it is possible to gain knowledge relating to architecture in classes like those of the Association; but even there there is a necessity for that private tuition or grinding which has done much in other professions. If partnership could be anticipated, and if one student devoted

himself to the scientific side of the profession and his friend took up the artistic, self-education and mutual improvement might be rendered easier; but as matters stand, what seems most to be desired is a near approach to the old-fashioned manner of individual oral instruction, while it should not supplant the three years' pupilage.

## DRY ROT.

BY GEORGE MURRAY.

(Concluded from page 5.)

LET us suppose we have such a spore or seed lying in such a situation, and let us watch it with a microscope and see what takes place. The image of one of these spores must be magnified at least 700 diameters in order to be at all conveniently visible. Even then it represents a very minute speck indeed. Slowly and imperceptibly a small protuberance is pushed out from one end of the egg shaped body, and this proceeds further and further, its progress being measured by hours, till we have a long, hollow tube produced, not quite as thick as the spore from which it started. This process goes on, and by-and-by a side branch is thrown out precisely like the first protuberance, then another and another, till we have quite an entanglement of tubes. If one watches this on a glass microscope-slide the matter ends soon after it has begun, so that temperature and moisture are not everything. If you grow a potato in a dark, damp cellar it will go on rapidly for a while, but will eventually perish when the original potato is exhausted and there is no soil to furnish material for further growth. So it is here. Let the same thing happen on a wooden surface prepared for it, and the tubes will penetrate the substance of the wood and derive fresh nourishment from it, when that stored in the original spore is used up. It will treat the wood precisely as the roots of the potato plant treat the soil.

Let us turn aside for a moment from the examination to inquire into this wonderful process. This exceedingly minute body, when stimulated by certain circumstances of temperature and moisture, proceeds to give rise to another individual such as that from which it arose. To our eyes it presents first a delicate outer membrane enclosing the whole—as the shell of an egg encloses its contents. This membrane, which possesses many remarkable properties, consists of a substance called *cellulose*, well-known in the arts, and to be got in an almost pure state in the form of ordinary cotton-wool. Enclosed by such a membrane we find certain contents consisting principally of *protoplasm*, minute particles of oil and so forth. It is with the protoplasm we have to deal chiefly. It is the seat of the manifestations of life, and is without doubt the most wonderful and mysterious substance brought to light in the whole range of scientific investigation to be found in all living beings, from man down to the lowest organism revealed to us by the microscope—in animals and plants alike. In it the mysterious property we call life exclusively resides. It is indeed as much the chief agent in this new growth of the fungus spore as it is in the moving and breathing life of our own bodies.

Such a substance almost defies description. A chemist would describe it as consisting of a combination of albuminous substances with water and small quantities of incombustible matter; but he would try in vain to reproduce these combinations. It commonly appears as a soft, plastic, tough, and inelastic mass, as in the present case; sometimes it is more gelatinous, and at others even stiff and brittle. All these conditions depend upon the quantity of water mixed with it. Still, one could not accurately call it a fluid at any time; in short, there is no other substance whatever with which it can be properly compared. So much, indeed, if no more, do we have in common with this minute and degraded organism. Undoubtedly its protoplasm is different from ours, but nevertheless it resembles it much more than it differs from it, and the general uniformity of character possessed by this substance throughout living nature is the most impressive fact in all natural history.

When the tube is protruded from the spore its membrane is merely an extension of, or rather addition to, the original membrane of the spore, and the contents of the tube are



likewise an extension of the original contents, reinforced by the water obtained from the surrounding moisture. It is to the activity of the protoplasm that the secretion of the new membrane is due. No growth can take place in any plant or any part of it unless in the presence of moisture—indeed, to such an extent that the membranes must be quite turgid with it—a fact that quite disposes of the idea that the dry-rot fungus can make any progress in dry timber.

The whole body of the mature dry-rot fungus consists merely of more or less dense aggregations of such tubes interwoven in vast numbers and in various states of activity. To some are assigned the functions of penetrating and breaking down the structure of the wood, and of gathering from it what is needful for the maintenance of the life of the fungus. Others transport the nourishment to more remote parts, while yet others are adapted to the production of more spores. These egg shaped bodies bud off from the ends of delicate tubes, which project very slightly from the surface of the general mass. Such, then, is the structure of the fungus which is called particularly the dry rot fungus—*Merulius lachrymans*. There are a number of others, allied to it, often enough found doing damage after the same fashion, and differing from it in appearance. It varies considerably itself in superficial appearance—in colour and shape; but under all its variations the structural and functional description just given will fit it and these allied forms as well. They are to be found growing on dead and decaying forest trees, as well as on the timbers in buildings; indeed, their native habitats are undoubtedly on such trees, where they grew long before man became a building animal. Indications are abundant enough that their ravages were observed and guarded against in the earliest times of architectural history. The antiseptic knowledge possessed by ancient Egyptians and Greeks, as displayed in the preservation of mummies and in the means taken for the maintenance of wooden statues and the like, was not only considerable but highly effective. The records of this knowledge are well known and full of the very highest interest, but it is to be regretted that we have not more left to us of such theories of the causes and operations of putrefaction as must have been put forward by the observing and speculative genius of the Greeks. The circumstances attending putrefaction in general, and making towards its acceleration or its interruption, must have been well observed and considered before the processes of embalming bodies and of imbuing wooden statues with oil were elaborated, and most likely the just conclusion had been reached that dry rot, let us say, in a wooden leg, possessed no small affinity in character with the causes of the decay of its living precursor. It is a question of the greatest interest and moment to readers of this journal how far and in what ways this knowledge of putrefaction in timber has influenced the development of architecture. It has been suggested that stone bases instead of wooden ones were made the supports of wooden columns to preserve them from contact with the humid earth, and capitals to protect the top from rain. Flutings would undoubtedly only offer a larger surface to moisture; but may they not have had their origin in the idea of channels to carry off water? There must be many other arrangements which would occur to an architect as worthy of investigation in this connection. It is manifest that the Greeks did not trust to the Cloud-compeller sparing his own temples.

Very little advance was made upon this knowledge, and no improvement in the methods of preservation, until about the middle of last century, when there began an era of inquiry into the causes and operation of putrefaction and of experiment to discover a satisfactory method of preserving timber. The matter was rendered urgent by the premature decay of the ships of our navy at a time of long-maintained conflict. Nothing thoroughly effective, however, was discovered for long, and it was not until the demand was rendered yet more imperative by the necessity for the preservation of railway sleepers, telegraph poles, &c.—objects placed where putrefaction most readily reaches them—that success was ultimately attained. Corrosive sublimate (bichloride of mercury) used in the process of kyanising, sulphate and other salts of copper (margarysing), chloride of zinc (burnettising), have each had their day, and in this country their use has almost been abandoned for

constructive work, and probably altogether for sleepers and telegraph poles. They have been driven from the field by the competition of the process called creosoting, introduced by Mr. JOHN BETHELL in 1838, which, when efficiently performed, may be trusted to hold its own against all manner of putrefactions. For a history of these processes, and a lucid description of creosoting, those interested should refer to an admirable paper by Mr. BOULTON, on the antiseptic treatment of timber, in the Proceedings of the Institution of Civil Engineers (vol. lxxviii., part iv., 1884).

In all cases where it can be used without interference with design, creosoting may be trusted to keep out putrefaction in timber, and its employment is the architect's best safeguard wherever danger may be anticipated. However, in domestic buildings the selection of timber obviously does not call for the same testing and discrimination as in engineering, and doubtless frequently it happens that the dimensions of the wood have a good deal more to do with its choice for a particular purpose than other considerations. It thus comes to pass that a piece of wood impregnated with the spawn of dry rot is introduced into a dwelling, and from it as from a source of infection the mischief spreads. Prevention having failed, one must look for a cure. There is something to be said against most cures in use, but perhaps least against petroleum, which is rapid and effective in its action, but obviously calls for very wary employment. By this means incipient dry rot may be checked, but the conditions favourable to its growth—such as dampness, &c.—ought to be removed at the same time. When, however, matters have gone too far for the administration of such remedies as are "for local application only," there is manifestly nothing to be done but reform it altogether.

Without doubt in most cases those parts of fungi which possess the greatest power of resistance to external influences are the spores or reproductive bodies, and in considering methods of extermination, it will be best and safest to reckon with them. The spores of most fungi are capable of germination immediately on attaining ripeness, but others require a period of rest the length of which varies with different species. However, a time favourable for germination comes sooner or later, and the power to germinate gradually deteriorates after this period is past. Some retain this power for years, but on the other hand, most kinds lose it in a few weeks' time. Excluding the influence upon them of poisonous substances, it has been proved that numbers of different spores will survive severe mechanical ill-treatment, and after repairing the injuries proceed to germinate. While those growing in the atmosphere resist the effects of considerable dessication, such as live below water perish after drying at an ordinary temperature. Such "resting" spores as tide over the winter for many fungi in our climate will bear subjection to  $-15^{\circ}$  up to  $-25^{\circ}$  C. without the least injury. It may be mentioned, to show to what extremes the power of a fungus to resist cold may reach, that SCHUMACHER, after subjecting yeast cells to  $-113.75^{\circ}$  C. found them in part alive and capable of growth. Resting-spores possess great power of resistance to high temperatures, and many short-lived spores bear considerable heating. There is a marked difference in the maintenance of life between those placed in water or vapour and such as are kept dry. Dry spores of many fungi will bear heating to over  $100^{\circ}$  C., and about  $130^{\circ}$  C. seems necessary to insure the destruction of the hardiest. In water or vapour, on the other hand, the death point is very much lower, and none have been proved to survive  $100^{\circ}$  C. Certain observers place these figures lower, but it will be best to reckon with the extremes, since there is great variety not only among different kinds but even among individuals of the same species.

The conditions specially affecting the process of germination are likewise of the greatest interest. These conditions resemble, in essential points, those of the seeds of the higher plants, viz., the presence of water, which is necessary to all growth; the supply of oxygen, and in special cases of nourishment, which at all events is needed later on; and a certain temperature of the environment of the spores. Very little has been done in the way of ascertaining the cardinal points of the temperature of germination of fungi—that is, it has been determined in but a few cases. These have been observed, however, in the case of



the common "blue mould" (*Penicillium glaucum*) among others. The minimum at which its spores will germinate is  $1.5-2^{\circ}\text{C.}$ , the maximum  $40-43^{\circ}\text{C.}$ , and the optimum about  $22^{\circ}\text{C.}$  (at which they germinate most readily). No doubt these figures vary considerably within certain limits, according to the different kinds of fungi, but one may fairly consider them as illustrative.

The object of these figures, &c., is to show how little we can use processes of heating, freezing, and dessication in effecting the destruction of fungi in such situations as dry rot, and how necessary is poisoning by means of petroleum or other substance. They may also afford information as to the conditions under which preservation of woodwork may be hoped for, where absolute prevention in the form of creosoting is not available.

### "THE HISTORY OF ART."\*

IT is a hazardous undertaking for an artist to represent the history of art by means of painting in a city which contains PAUL DELAROCHE's "Hemicycle." This is what M. EHLMANN has attempted, and, as our readers have an opportunity of judging of both works by means of illustrations, they will be able to give each artist his meed of praise. The two paintings are executed on curved surfaces, and the designs have been adapted to suit the peculiarity of the position.

DELAROCHE's work is in the theatre of the Ecole des Beaux-Arts, and his idea was to suggest to the students that the great artists were observing them. But as it would give stiffness to the composition if all the figures were staring at the spectators from the canvas, some are represented as engaged in discussion. It may be assumed that the subjects are the quality of the students' works and the prospects of French art. While they were in this lower world so many artists could hardly be brought together without risk of bloodletting; but Elysium has softened their manners, and the whole composition is marked by its repose and absence of action. Hardly a finger is raised to give emphasis to an opinion.

In M. EHLMANN's work there is movement throughout, and as it is suggestive of the various transformations which art has undergone, the repose of DELAROCHE's work would be out of place. In one we have beings whose work is over, and who look as if they should like once more to handle palettes and chisels. In the other we have forces in action, for what is history but a discovery and relation of all that has been done by force? M. EHLMANN depicts the dynamics of art, and DELAROCHE the statics. One tells us of the struggle to overcome difficulties, the other proclaims the victors.

A puzzle in all art history is to know where to begin. Greece, Assyria, Egypt, derived their art from something older, and it is in vain that we seek the common origin. Here, again, M. EHLMANN recognises the facts. His picture is painted around the walls of a staircase cupola, and thus when we arrive at POUSSIN, RUBENS, and HOLBEIN, we see them succeeded by the representatives of Eastern art, who do not appear out of place when found in contiguity to the ancient Egyptians, and so on through Greece, Rome, Byzantium, and Florence. We may apply to the picture RICHTER's remark on HERDER, and say that in it "Greek life-freshness and Hindoo life-weariness are wonderfully blended."

In the first part, which is published this week, we begin with Greece. By introducing the primitive actors as Tragedy and Comedy we are led to imagine how much art owed to the drama. The desire to appear and to win applause was not confined to the simple Thespians or the actors in the festivals of Dionysus. Then came the games in which the human figure was exhibited in all its perfection, and with such models before them the Greek artists could hardly fail to produce works which are still unsurpassed. According to the old Greek poem, the first wish ought to be for health, and the second for beauty, and those qualities characterise the sculpture. The four dancers which M. EHLMANN introduces suggest the grace and vigour of the Greek form; the skill by which action was

restrained and even the fury of Bacchantes and Cretans was subjected to rhythmic laws. Then comes PINDAR, who is fitly placed there as the exponent of a similar power in poetry; for he also believed that it was possible to have too much of even the most sublime enthusiasm. Besides, he was the author of many song-dances, in which music and motion were combined, and in one fragment he appeals to the gods to send Art to regulate the festival:—

Come hither to the dance,  
Olympian gods, and send us glorious Grace,  
Ye who frequent  
The city's crowded centre, where the scent  
Of incense hangs about the holy walls  
Of Athens, and her famous market-place  
Gorgeous with ornament.  
Accept our outpoured offering  
Of wreaths of violets fresh plucked in spring.

The archaic statue of *Minerva* is suggestive of another factor in Greek art—a sort of conservatism or obedience to types which were consecrated by age and tradition. Figures of *Architecture*, *Sculpture*, and *Painting*, who have come to do homage to the goddess, are succeeded by the artists of the Parthenon. The figures which stand for Greek art are fourteen in number—that is, seven on either side of *Athene*; but there is no formal correspondence, although the relation of the groups is sufficiently expressed.

The arts of Athens could not protect Greece against the thews and sinews and discipline of the Roman soldiers. But the invaders were not unfriendly to art, and M. EHLMANN puts a chapter of history when he represents the soldiers carrying off the sculptor as well as his incomplete statue. There is much pathos in the figure of the sculptor who appeals in vain to the goddess for protection.

The figure of a woman at the feet of the impersonation of *Power* tells us that in Rome art became subjected to the conqueror. Religion and law obtained more supremacy, and even poetry assumed an official character. The Roman group in its stolidity and unity forms a contrast with the more free life of Greece, and we have no longer the artist offering his work to the gods. M. EHLMANN has also reflected on that amazing phenomenon in universal history which is called the overthrow of Roman power. It seems a mystery how so splendid an organisation could collapse, and in a few figures M. EHLMANN has expressed the substance of volumes. On this subject a paragraph may be quoted from an essay by Cardinal NEWMAN:—

Who can estimate the strength of a political establishment which has been the slow birth of time? And what establishment has ever equalled pagan Rome? Hence has come the proverb, "Rome was not built in a day." It was the portentous solidity of its power that forced the gazer back upon a reflection, which was the relief of his astonishment, as being the solution of the prodigy. And when at length it was built, Rome, so long in building, was "Eternal Rome." It had been done once for all; its being was inconceivable beforehand, and its not being was inconceivable afterwards. It had been a miracle that was brought to be; it would take a second miracle that it should cease to be. To remove it from its place was to cast a mountain into the sea. Look at the Palatine Hill, penetrated, traversed, cased with brickwork, till it appears a work of man, not of nature; run your eye along the cliffs from Ostia to Terracina, covered with the debris of masonry; gaze around the bay of Baïæ, whose rocks have been made to serve as the foundations and walls of palaces—and in those mere remains, lasting to this day, you will have a type of the moral and political strength of the establishments of Rome. Think of the aqueducts making for the Imperial city for miles across the plain; think of the straight roads stretching off again from that one centre to the ends of the earth; consider the vast territory round about it strewn to this day with countless ruins; follow in your mind its suburbs, extending along its roads for as much, at least in some directions, as forty miles; and number up its continuous mass of population, amounting, as grave authors say, to almost six millions—and answer the question, How was Rome ever to be got rid of? Why was it not to progress? Why was it not in progress for ever? Where was the ancient civilisation to end?

The people who witnessed the invasions of Northern and Eastern barbarians believed that an end had come to the world. It was not only that whole districts were depopulated, but civilisation itself appeared to have been destroyed for ever. The painter in SHAKESPEARE'S "Timon of Athens" tells the poet that he is able to make

\* See Illustration.



paintings that will demonstrate a moral more frequently than can be done by means of words; and it would be difficult to imagine a more effective incident than that which has been introduced by M. EHRMANN. Unlike the Roman warrior who preserved the statue, the barbarian is seen using a figure, which he has torn from a church, as a weapon against one of the auxiliaries who defended what was left of the Empire, and the degenerate descendant of "the she-wolf's litter" can make no use of his hands except to wring them. For all we know to the contrary the artist may have wished to point a moral, and suggest that the pillage of Greece by Rome had been avenged, and that NEMESIS had made use of art as a means to an end.

If the history of art were related in the form of a drama the curtain ought to fall at the end of this act, and an interval of many centuries should be supposed to elapse before it rose again. But painting does not allow of gaps; so the monk who was the means of preserving some relics and traditions of art out of the general conflagration comes close to the Goth. Then we have NICOLÒ PISANO, CIMABUE, GIOTTO and the early Florentine artists, and with their names we may conclude for the present.

(To be continued.)

### THE NESTOR OF FRENCH PAINTERS.

IN the last Salon there was a portrait of a lady, numbered 1,039, and described as the work of M. Jean Gigoux. Any one who studied it would hardly believe that it had been painted by an artist who obtained a first-class medal as far back as the year 1835. M. Gigoux resides in Paris, and his studio in the Rue de Chateaubriand, near the Arc de Triomphe, is the resort of the celebrities of the capital, who are proud to do homage every week to a painter who has been the friend of nearly all the great writers and artists that flourished in France during the century, and whose own merits entitle him to honour.

"Le Chevalier du Guet" has described an "At Home" in the *atelier-salon* of M. Gigoux. On entering the house, he says the visitor is sure to find, from the sound of the voices, that a great many friends have come before him. As he ascends the staircase he will recognise some of them; and one may be heard saying, like M. Edmond About, "It would be impossible to make a false step here without running the risk of tearing a canvas worth fifty thousand francs." On the threshold you are met by a man of middle height—a Gaul in type, with long grey moustaches and an abundance of white hair. He wears a small hat of grey felt, and stretches out both hands to grasp yours. This is M. Jean Gigoux, the *doyen* of the Burgundian artists in Paris, the man to whom the enviable privilege is vouchsafed of being able to conserve the affections of youth, as well as its charm, enthusiasm, and innocent gaiety. You are introduced to the visitors who are present, and very quickly find yourself at ease among them.

The studio has the appearance of a room in a club, and everyone is talking. Art, the theatre, the last romance are freely discussed; about politics alone little is said. In one place we hear M. Pasteur analysing and praising some unfinished painting which is on the easel. He is interrupted, it may be, by M. Bonnat, the portrait painter, who desires to have the latest experience about the *savant's* experiments on canine madness. MM. Henner and Hector le Roux, the painters, are also eager for information. But M. Oudet and M. Marquet, the sculptors, propose a game of dominoes, and science is at once forsaken. Elsewhere in the studio we see a group of notabilities in politics. Here also are architects, and among them is M. Edouard Renaud, who long ago constructed the very first *atelier* that was owned by M. Gigoux. In the recess of the vast window that opens on the street one may find M. François, the landscape painter, who is the oldest pupil and the faithful friend of the host. He is relating to the young painters, MM. Rapin and Pointelin, some trait of Corot, who was also his master, and whose memory he reveres. The sculptors have their own corner, and MM. Chapu, Guillaume, and Gauthier are probably occupied in it with the last competition, or a scheme for the reform of the Salon. Every question relating to art comes up for discussion in this *atelier*. There reputations are determined; there subscriptions or auctions for a poor artist are organised; there wit sparkles without wounding; there one learns what has been done during the week, or what is in preparation. And for three-quarters of a century or so these meetings have been held.

But what a treasury of anecdotes will be the recollections of M. Gigoux whenever they appear. From Madame Vigée-Lebrun to Courbet, from Baron Gérard and David d'Angers to M. Meissonier, he has known all the artists, has assisted in all the transformations of the French school, has shared in all the

progressive movements, and borne a part in every one of those glorious struggles which have brought about the emancipation of art. Mention an illustrious name, and he will recall some story that is pathetic or comic. One anecdote leads to another, becoming like links in a golden chain which encloses the past.

Among the most interesting of the recollections are those relating to the rivalries of modern masters, which in their bitterness resembled the feuds of the men of the sixteenth century. Two instances may be cited. David d'Angers and Pradier, the sculptors, detested one another from their hearts. Diaz, the painter, abhorred Ingres. M. Gigoux witnessed many of their encounters. David d'Angers, in going to the Institute on Saturdays, was accustomed to call on M. Gigoux. The studio of Pradier was on the ground-floor of the house, and he was able to watch the coming of his enemy. One day, on seeing David coming up the steps, he planted himself near the door, and pretended to be busy in retouching one of his statuettes. By putting his back against the wall and extending his legs, he made entrance difficult, and it was with a strain that David was able to force his way in. But he soon took his vengeance. He looked steadily at Pradier, and with a sudden blow of the fist he bonnetted him. Then he passed on proudly.

The hate of Diaz for Ingres was exhibited in a different way. Diaz used to say that if he ever had the misfortune to come across a picture of Ingres in the morning he was unable to work for the rest of the day. Once, at table, somebody imprudently mentioned Ingres's name before Diaz, and forthwith he became furious. He struck the floor with his wooden leg, and cried out that Ingres was worthless, and as much out of place as a Chinese among the ruins of Athens. M. Gigoux has in his dining-room a portrait of a picture-dealer which Ingres had painted in his best style, and presented to the man. But the dealer was compelled, by necessity, to part with it, and it came into the possession of M. Gigoux. When Ingres heard of the incident he said, "What an unfortunate fellow—he has sold himself."

It is easy to pass from Ingres to Eugene Delacroix. Troyon, the cattle painter, was most eager to possess a picture by the renowned colourist, and seeing one in a window he gave sixteen hundred francs for it. When Delacroix was informed of the purchase he was greatly moved, and ran to Troyon's studio in order to express his recognition of the kindness. While speaking he took up a palette and brushes, and then and there painted a superb figure of a lion, which he presented to Troyon. The excessive nervousness of Delacroix was well known. Once, when looking at a splendid lithograph, which M. François had executed after the *Barque de Don Juan*, he seemed to be afflicted on again seeing his picture. Pointing to one of the figures he said it should represent a man who died of famine while on the ocean, and yet, said Delacroix, "I have represented him in good condition. How could I have done so stupid an act?" M. François asked if he intended to retouch it. "Retouch it!" said Delacroix, "there would be too much to do. I was feverish when painting it. What would you wish? Do as you like. Has Audran copied Lebrun literally? No, he has planed him. Well, you plane me smoothly." M. François, however, took care about the planing.

Among other works, M. Gigoux designed the illustrations for a fine edition of the "Gil Blas" of Lesage. At first the publishers wished to obtain a hundred sketches. The artist, being engaged during the day on his large picture of *Leonardo da Vinci*, could only devote his evenings to the task, and he said he was afraid that he could not find enough subjects in the book. Eight days afterwards there was a request to him to make the number four hundred. On reading "Gil Blas" with attention, he discovered that on every page there was a suitable subject. Accordingly, when he was asked to give six hundred vignettes, he replied that he could do a thousand, or as many as was desired. In the course of eight months the three publishers divided between themselves 150,000 frs. out of the edition, but the artist who was the means of attracting so much profit had no share in it.

In 1833 or 1834, M. Gigoux met a handsome young man, called Chevalier, in the *salon* of the Duchess d'Abrantes. He became better known as an illustrator of books, under his pseudonym of Gavarni. At the time he was noted for his dandyism. M. Gigoux speaks of him with unlimited admiration. As one approaches the present time, the souvenirs of the artist become more numerous and striking. Take, for instance, the story of the interruption of a *soirée* of Lamartine's by an absurdity of Jean Journet, the reformer—a man who has been represented by Courbet with a wallet on his back and a pilgrim's staff in his hand. On the occasion referred to, Monsieur and Madame de Lamartine held a reception, but in reality they received nobody. As the hour advanced Madame de Lamartine, becoming surprised, turned to the *salon*, which she saw was full. There in the midst, mounted on a chair, was Jean Journet expounding the principle of Fourier's Phalanstery, or dwellings in common, to the assembly. For once in his life



he had found an auditory, and had resolved that it should not escape. The guests were accordingly detained, in spite of themselves, until the end of the oration, and even M. de Lamartine could not help joining in the hilarity. But the incident had one advantage, as it was a departure from the commonplace character of fashionable assemblies.

What is it that M. Gigoux has not seen or heard? He has observed the two young dramatists, Victor Escousse and Auguste Labras, pass under his window carrying the charcoal by the aid of which they committed suicide on the failure of their melodrama in 1832. He has heard Louis XVIII. attempt to be witty when giving the gold medal to Géricault, and heard Madame Vigée-Lebrun, the portrait-painter, talk of Marie Antoinette. He has been the confidant of Alfred de Vigny, and has discussed science with Humboldt, and æsthetics with Charles Blanc. He has seen the great Millet compelled to exchange one of his pictures for a new canvas. He has been the friend of Béranger, Thoré, Théophile Gautier, Barye, Joffroy, Daumier, Corot, Marilhat, Theodore Rousseau, and of many other illustrious men. It is the intention of M. Gigoux to leave his series of drawings by modern masters to the museum of Besançon, which is his native place; and the most lucid commentary on them will be his own recollections of the authors.

### MANCHESTER SCHOOL OF ART.

THE annual distribution of prizes to the students of the Manchester School of Art took place on Tuesday evening in the Town Hall, Albert Square. The Mayor presided, and the prizes were distributed by Mr. Val Prinsep, A.R.A.

Mr. Val Prinsep, in addressing the students, began by speaking of the sadness of the colours in Manchester. It had not only struck him, but every other artist who had come north. No doubt males were devoted to black cloth. In France they would find that a fond mother dedicated her child to the Virgin Mary in white raiment. Males, both in Manchester and elsewhere, had their time very much occupied, and had but little leisure to devote to the choice of their clothing. Perhaps it was well it was so; but it did seem strange to him, as an artist and one from the south, to see the self-denial exercised by the fairer sex, who had so much latitude given to them, in dress at least. Surely amongst the working classes one could see something better than dirty drabs and blacks. Surely some of the large employers of labour might furnish them with some of the cheap articles which were so pretty, and of which he had no doubt a great many were made in Manchester. A Manchester lass would surely not refuse to wear what she had contributed to make, as the cook and the confectioner used to refuse to touch the dishes they had evolved. To bring colour, by whatever means, into the dwellings of the poor would do good, if it only showed the general barrenness which surrounded them.

He feared he would be treading on delicate ground, but he should like to say a few words about the buildings in this city. There had been many magnificent palaces raised at the public cost, and many by private enterprise, in Manchester. The building in which they were was a very magnificent specimen of a bygone art, and inasmuch as it supplied admirably, he was told, the necessities for which it was built, the architect deserved the greatest possible praise. But, candidly speaking, he did not think that Gothic architecture was adapted to Manchester. They had made their experiment, and it had turned out as well as Gothic architecture could turn out, but when Gothic architecture was at its prime the tower and pinnacle and spire rose clear against the sky as God made it. The stone was its own beautiful colour, or as the ages went by time gave it the colour, which artists so much envied, of a still more beautiful grey. The many angles and vast quantities of details of Gothic architecture were never intended for a smoke-grimed atmosphere, and when covered with carbon they looked heavy and dreary in the extreme. He had noticed since he was in Manchester last that even the Town Hall looked blacker. If the artist who invented the flying buttress, or the beautiful traceried window, were alive nowadays, did they think he would be content to expose his work to the Manchester atmosphere? He was delighted to see that the Corporation had begun to decorate their halls. He would have liked, for the sake of his friend Madox-Brown, and for the sake of Manchester, the decorations to have been larger, but they were a good beginning, and he hoped that the Corporation would see the justice of extending them till there was no blank wall and no public building in Manchester which had not its artistic interest; an interest not only for them that were there that day, but for their children after them, so that they might be brought up with a knowledge of what was beautiful and what was good. These things no doubt appeared as trifles to them, and trifles no doubt they were when compared with the mighty questions which came before the chairman and his colleagues. But he

would have them remember the noble lines which Samuel Johnson was wont to thunder forth—

Think nought a trifle, tho' it small appear :  
Small sands the mountain, moments make the year,  
And trifles life.

They had no doubt seen in Manchester, at least on the stage, a caricature of those curious beings who went by the name of "æsthetics." Very ridiculous they were, with their long dresses of sage green, and, above all, their odd, sentimental jargon of talk. But in æstheticism itself there was a great and noble truth. These "æsthetics" seemed to him a kind of "Salvation Army" of the arts, upholding a noble cause, but covering it with tomfooleries. Æstheticism was the science of the beautiful, the science of the arts, and as such the language was taught in that school. He would like everybody in Manchester to consider well all subjects that had to do with beauty, for it was not only themselves that they hurt by any want of taste, both publicly and privately, but their eyes got so used to "the accursed thing" that they failed to see its badness. Painters constantly found, when they were at work on a picture and gazing at it day after day, that they had no idea what the picture was like, and they committed the most glaring faults, which were patent to the eye of the merest tyro in the profession. Any one of those present who committed a fault in form or colour in the decoration of a drawing-room was doing a grievous wrong to the children who were to be brought up amongst such things. He would have them be very careful in all matters of taste. It was infinitely easier to admire and understand the commonplace than to admire and understand what was really good and beautiful. To admire the commonplace required no effort of the mind at all, whereas to see what was really grand in a noble work required both knowledge and observation. Take for example a magnificent sunset. They would say they had seen sunsets like that a thousand times, and he had no doubt they had, and in a thousand pictures. It took no effort on their part to recognise it or, indeed, on the painter's part to reproduce it. A great painter when he reproduced a scene looked at it with his own eyes, and not through any one else's spectacles. He gave them what he felt, and what he alone felt, and if they understood, or cared to understand, what he had done, it affected them in the same way that nature ought to affect them if they cared for nature, for nature was recalled with novelty and charm, and it was full of that grandeur, not on the surface but low down, as were our best feelings, and it was with those feelings that a great artist worked, no matter how he worked, whether in poetry, or music, or colour. If they acquired that language it would open their eyes, and cause them to see many beauties in nature which they had passed by unperceived, and it would make them often, he would venture to say, better men.

They would think, he dared say, that he was a long time in coming to the art school. He had that day been inspecting the art school, and he had read with care its report. All he could say was that one of the things he had envied in Manchester was the building in which the art school was located. If he said a few words to them, they must recollect he could lay down no rules by which they could work, for in an address of that kind it was absurd to do so. He could only try to make some of them students, for if he were to lay down rules there was no one in his own craft, who knew the craft, who could not break through them with impunity. There was once a king of Prussia who wrote very bad Latin grammar, and when the faults were pointed out to him he said, "I am a king, and above grammar." So a great artist made rules as he pleased, for he was a king amongst men. Let no one imagine that he was a genius, for geniuses were very rare. Let them, however, beware lest, like the ass with the lion's skin, their pretensions brought them only into ridicule. If, however, they all worked diligently at the school, if they were acquiring the A B C of the profession, the grammar of the art—and let him tell them that whatever they might think about writing and about expressing their thoughts intelligibly in artistic language it was going a great way—if there were any present who wished to enter the ranks of the profession to which he belonged he would wish them God speed on their journey, and bid them acquire knowledge on all sides, no matter whence, for knowledge was absolutely necessary. He would warn them against that great and besetting sin—especially amongst young artists—the charm of eccentricity. Eccentricity was not genius; it was too often the cloak of ignorance. He would also say to them that the race was not always for the swiftest, and that that man who had the noblest thoughts to express had very often the greatest difficulty in finding words to express them, whereas the fluent gabbler found words enough in which to clothe commonplaces.

There was another class to which he should like to address a few observations—those who followed what were called the applied arts; for in Manchester, and indeed in England, there seemed to be a great opening for such things, all people being keen now to acquire pretty furniture and pretty curtains, and works of art of all kinds not so expensive as pictures. It might



seem to some of them an easy thing to design a pattern; but let anyone sit down to try to invent an original pattern, and he would soon find that it was exceedingly difficult to do so. The great text-book for that art, and indeed for all arts, was nature. In every hedgerow we should find forms enough to aid the designer. Each tree, each flower, was an inimitable work of art in itself, and could be copied and studied. When a student painted a head, he could with great care get all the features correct—he could even get them very like; but the result too often was hurried and inartistic. When the artist set to work to paint the head he recollected what he had to do—how the skin was soft and tender, how the blood coursed beneath the skin, giving an infinite variety to tone and colour. He remembered that the nostrils and mouth were capable of movement and expression, that the eye was liquid and at the same time piercing and full of expression, and he generally found that he had to sacrifice a certain amount of detail to give his impression of that head. And so it was in all works of art. They must put sentiments into them. It was a curious question, which had puzzled a great many, that the least civilised nations very often had a superior power of design. He must warn them that what they were doing in that school was only the beginning of what they would have to do by-and-by. They were learning there the A B C of the art, the means to the end. There was a great future for British art, no doubt, if it could only be attained, for the students that were to come, for at present it hardly existed in a great many things.

## TESSERÆ.

### Designs for Incised Slabs.

WILLIAM BURGESS.

IN designing new subjects we must be careful to the last degree to give them a sharp and energetic outline, even when copying from nature. For unless the subjects are really copied directly from nature, there can be no freshness or originality about them. In designing a group of figures, it will be necessary to have the living model and good stout cloth garments; for a man may copy Mediæval figures for ever and yet be unable to design as they did in the Middle Ages, for doubtless then, as now, really good figures (and there were not a few of them produced in the thirteenth and beginning of the fourteenth centuries) were copied directly from the life. If monsters must be employed, why not follow the advice of Leonardo da Vinci, who recommends us in this case to copy parts of existing animals, and afterwards to join them together? But I think the giraffe, the kangaroo, and the apteryx would be as effective as any Mediæval chimera, to say nothing of the resources we might derive from the antediluvian world. Truth is always stranger than fiction. Again, in designing an incised slab, our great aim should be to make the object cover the ground pretty equally, so as to leave no very large spaces of cement which would be liable to be worn into holes. When this cannot be done a small circle is left, so as to diminish the space and balance the composition. These little circles occur very frequently in the S. Omer slabs. When this space becomes larger, as in the Taurus at Canterbury, they become quatrefoils; and when, as in the equestrian figures, it becomes still more extensive, a stem of foliage supplies their place. Another point to be considered is the termination of the lines of the drapery. They should never, if possible, end in a sharp point, but rather in a blunt point with a nick at the end. The object of this is evident. The workman can get his drill or chisel to the end of the latter, whereas the former must necessarily be shallower towards the end, and consequently soon become obliterated in that part, especially when the stone has become worn down to the depth of an eighth of an inch, as the dalles of S. Omer have. Again, the borders should be composed of a stout, strong network, of two or more scrolls; if a single scroll is used, figures should be introduced to restore the proper balance and give it strength. An additional amount of energy is got by not making the scroll homogeneous with the outer line of the border. A good strong line should be employed to divide them.

### Dignity of Craftsmanship.

QUATREMÈRE DE QUINCY.

Artisans are, generally speaking, too dependent on their employers to act otherwise than as they think most likely to please; and thus, by depressing themselves, they contribute to lower the standard by which they are judged. The case ought to be reversed. If every man contrived to raise himself a little above the usual standard, his profession would rise with him, and would soon be held in a much higher degree of estimation. Every man, in short, when he deserves to be respected, communicates to his profession a degree of consequence which cannot fail in the end to be advantageous to himself. The

artisans of Rome were citizens, and voted in the *comitia*; and the Greeks appear to have made still fewer distinctions than the Romans between the liberal and the mechanical arts, and between artists and artisans. In Greece, every artist who excelled in his calling could look forward to his name being immortalised, as well as that of the most distinguished artist. We have handed down to us the name of Architeles, a famous stone-cutter, who distinguished himself in the art of hewing out columns, and in the Isle of Naxos statues were erected to Bizas, who first formed the Pentelicus marble tiles to cover buildings. The names of several other artisans, of different kinds, have also reached us, and many works and modes of working now practised have taken their names from that of the workman who invented or perfected them.

### Marble Veneering of Walls.

SIR G. G. SCOTT.

The practice of overlaying buildings with thin slabs of marble is open to this objection, that if the slabs are quasi-constructive in their distribution they involve a sham; if not so, they disturb the constructive idea which is so desirable to keep up in dignified architecture. I consider the practice fair and admissible if not pretending to be constructive, but would suggest that it would be much better to limit it to panels and other subordinate parts, the genuine walling material being shown around it. I may mention that at St. Mark's, at Venice, the slabs are placed with their longest dimensions *vertical*, as if to prevent any thought of their pretending to be constructive. In the domestic buildings at Venice, the windows being generally of marble while the walls are of plastered brickwork, the former are made almost like a modern chimney-piece, the whole window construction being cut out from the wall into which it is built by what a modern mason would call an "out-ground" or thin strip of marble (perhaps an inch and a half thick) built edgeway into the wall, and enclosing the ornamental dressings of the window. The edge of this slip of marble is cut into the peculiar Venetian dentil. Coloured marbles are often used within this framing.

### Selection of Granite.

PROFESSOR SULLIVAN.

All granites and porphyries are not equally durable; indeed, some decay with an amazing rapidity. The cause of this decay is not well understood, but it appears to depend as much upon the chemical constitution as upon mechanical aggregation. Some felspars contain potash and others contain soda. Experience and theory show that soda granites decompose more readily than those containing potash. The coarser the texture of granite the less durable it is; hence, when the stone is selected for the erection of public buildings, it should be fine and uniform in texture. It should also be free from small crystals of iron pyrites disseminated through it, or any other ore of iron, as these, on exposure to the weather will rust, and thus destroy or deface the stone. The obscurity in which this question is involved can be judged by the fact that often in the same quarry a portion of the rock, appearing to differ in no respect from the rest, will totally decompose in a few years.

### Roman Mosaics.

B. PISTRUCCI.

The mosaics which are made in these times are composed of pieces of glass, sometimes called smalt and sometimes paste. They are made of all kinds of colours and every different hue, and for large pictures they take the form of small cakes. For small works they are produced in threads, varying in thickness from that of a piece of string to the finest cotton thread. Heaps of these of all tints and colours are prepared. A plate or slab of copper, marble, or slate is then provided, of the size and thickness required for the intended work. This slab is hollowed out so as to resemble the bottom of a box or a tray to a depth proportioned to the work. This may vary from an inch to the eighth or even the sixteenth of an inch, if the work is to be small. This hollow is then filled with plaster-of-Paris, well smoothed, on which the outline of the proposed design is very accurately traced, and an ink pen is passed over the outline to preserve it. Very few tools are required by the workmen, but for the large works, where comparatively large pieces are to be inserted, small sharp-cutting hammers are made use of for splitting the cakes and reducing them to their proper size and form. Pincers also, of different forms, are used for placing them equally. In very small works, instead of hammers, sharp-pointed pincers are made use of, like those with which diamonds are taken up, and sometimes a small tool like a *scarpello* or chisel. The heat of an oil lamp is required to enable the workman to draw out the strips of glass to the fineness he wants, even to that of a hair. When this is all ready, the first operation is to dig or scoop out with a *scarpello* of the proper size a small piece of plaster-of-Paris from the



bottom of the box or tray, without injuring the outline. This is filled up with a kind of mastic, like that which is used to fix panes of glass in the sashes or frames of a window, and the required piece of smalt or glass is then pressed into the mastic or composition. In this way, step by step, and from day to day, repeating the operation of scooping out a small piece of plaster-of-Paris, and never losing sight of the outlines, they gradually fill up the whole tray. In works of considerable dimensions the workmen place the tray or plate before them as painters place the canvas on which they are painting, and have the original always close to them. For smaller works they sit at a table, as if writing, and generally keep their work flat on the table. When this operation is completed, it is passed over a stone made perfectly smooth and cleaned of every kind of dirt. But as it will always happen that interstices, however minute, will be left more or less between the several small pieces of smalt inserted in the mastic, these are to be carefully filled up with heated wax, applied with hot iron instruments from a pallet on which it has been prepared for the purpose; and much of the good effect and finish of the work will depend on the ability and care of the workmen by whom this operation is performed.

#### French Scaffolding.

CAPTAIN FOWKE.

The French method of scaffolding differs in many points from that in use in this country; it is entirely of squared timber, and put together with bolts and nuts, and, instead of ladders, regular stairs are constructed in different parts of the scaffold itself. Ready means of ascent and descent are points of more importance in France, from the fact of the substitution, in a great degree, of manual labour for mechanical in raising material to the work. To such an extent is this carried, that in the construction of a wall 50 feet in height, which was erected at the request of the British Commission, the stones of which it was composed were handed up from man to man by men placed on a ladder and along part of the scaffold, and twenty were constantly so employed.

#### French and Italian Renaissance.

F. MELIZIA.

On comparing the edifices of France and Italy, it appears as if the architects of the two countries had derived their principles from different sources. A variety of climate and habits necessarily produces a difference in architecture; but this ought only to be observable in the materials, in accommodation, and apertures for the introduction of light and air, in the form of the roof, or other matters connected with these points; never to the application of the orders, ornaments, the forms of doors or windows, the proportion of parts to the whole. These latter should be conformable to rule, and the same in every climate, the laws of architecture being immutable. The French dislike monotony of effect, particularly in their large buildings. Blondel could not endure a design that was without projecting masses, or numberless ornaments between the windows, which he considered requisite to produce what in France is termed "movement" and "effect." Palladio has given this to his façades by graceful forms, well-chosen situations, correct profiling of his orders and details, and just proportions. Indeed, a true brilliancy of effect is produced by an arrangement of columns, as we see them in the Pantheon, Antoninus, Faustina, and other Roman temples.

#### Painting on Plaster.

D. R. HAY.

The process of painting plaster-work is as follows:—White lead and linseed oil, with a little litharge to facilitate the drying, are mixed together to about the consistency of thin cream; a coating of this being applied, the oil from it is sucked into the plaster in the course of a few hours, leaving the white lead apparently dry upon the surface. In the course of a day or two, when this coat has sufficiently hardened, another is given a few degrees thicker, the oil from which is partially absorbed according to the nature of the plaster. In the course of a few days more a third coat is applied. This coat is made pretty thick, and, if the absorption of the oil from the second coat has not been great, about one-fourth of spirits of turpentine is added; but where the absorption has been great, a less proportion of spirits of turpentine is employed. Into this coat is put the colouring ingredients, to bring it near the shade intended for the finishing coat. Should the plaster now be thoroughly saturated, the flattening, or finishing coat is applied. Before this is done, however, a fourth coat, thinned with equal portions of oil and spirits of turpentine is generally given, particularly where the work is wished to be of the most durable kind. The flattening or finishing coat is composed entirely of paint, that is, of white lead and the colouring ingredients mixed together and ground in oil to an impalpable paste. This mixture is of a very thick consistency, and must be thinned

with spirits of turpentine until it will flow easily from the brush. The spirits of turpentine being very volatile evaporate entirely, leaving the surface of the paint of a very compact and hard nature. By this process the plaster is rendered incapable of absorption, and the surface of it is hardened by the oil which it has sucked in from the first and second coats, and is thereby rendered less liable to breakage, with the great advantage of being washable.

#### Tests of Wrought Iron.

D. KIRKALDY.

Whenever wrought iron breaks suddenly, a crystalline appearance is the invariable result; when gradually, invariably a fibrous appearance. Whether, on the one hand, it is finely or coarsely crystalline, or, on the other, the fibre be fine and close, or coarse and open, depends upon the quality of the iron. When there is a combination in the same bar or plate of two kinds—the one harder or less ductile than the other—the appearance will be partly crystalline and partly fibrous, the latter produced by the gradual drawing-asunder action previous to and at the time of rupture; whilst in the former the iron breaks suddenly, without elongating at time of rupture. When the proportion of the harder is considerably less than the softer, the former snaps suddenly, whilst the latter continues stretching; but when nearly equal, or the less ductile predominates, both portions break together, or almost at the same moment: the one part, gradually arriving at its limit of endurance, breaks with a fibrous appearance, whilst a greatly increased strain consequently coming on the remaining portion, it suddenly gives way, producing a crystalline appearance. The relative qualities of various irons may be pretty accurately judged of by comparing their fractures.

#### Glass Painting.

F. KIRCHHOFF.

A stipple-shadow is a series of dots, which, if properly managed, should not touch each other. This style of painting is the most transparent, as it allows the local colour of the glass to blend with the shadow. It is used for broad, bold work. The smooth painting requires less colour on the glass than the stippled, as it intercepts the rays of light more effectually. This method is generally adopted in glass where high finish is required, or when the window is close to the eye, as, if skilfully done, the glass-painters' colour will appear like a darker tint of the glass. The third style—the smear—is a sort of compromise between the other two. It is mostly used for Mediæval work. It is so painted that the brush shall leave the mark or grain, as it is technically called, and not softened off as in the smooth manner. When dexterously executed, it gives great richness to the glass. It must be finished off in one bold, decided, yet careful touch, as, if painted over again, it loses the grain which constitutes its merit. Some of the old windows exhibit splendid specimens of this treatment. It is to glass what the sculptor's tool-marks are to stone, or a wood-carver's chisel-marks to wood. It gives a sharpness and vigour to each material. There is also another method of getting shadow on glass by etching it up with lines painted on with a fine brush, which, though it allows of getting a more correct form, combined with transparency, is not very generally adopted.

#### Metallic Oxides in Cements.

"MINUTES" OF INSTITUTION OF CIVIL ENGINEERS.

Hydrate of lime is the basis of all mortars; but this will not make a water mortar or cement without the addition of a metallic oxide. The addition of clay will effect this, but most clays contain a metallic oxide. The analysis of Dutch terras, of basalts, and of puzzolana, according to different experimenters, show a considerable quantity of iron, and an addition of any of these to hydrate of lime will make a water mortar. Thus it appears that we must carefully distinguish between a good mortar and a good water mortar or cement. Hydrate of lime is the basis of both. Good mortar depends for its excellence on the slow absorption of carbonic acid; and the slow absorption of this is, according to Tennant, the essential condition for good mortar. It is remarkable, according to Pliny and Vitruvius, the Romans kept their mortar for three years; and it was the custom among builders to bury mortar or keep it in a cellar. It was thus prevented from absorbing carbonic acid from the atmosphere, or in other words, from being reconverted into limestone. According to the experiments of Tennant, it appears that mortar in three years and a quarter will regain 63 per cent. of carbonic acid of which it has been deprived. The absorption of the carbonic acid being the condition of the mortar hardening, if it is used under circumstances through which the absorption cannot take place, as under water, some other material must be supplied, and the addition of a metallic oxide appears to supply the required element. A singular fact has been noted: that the rust of iron has a peculiar disposition to travel through moist clay; the rate of this transfer was in one instance about an inch per month.



## NOTES AND COMMENTS.

THE reports which have been sent to the Foreign Office by the English ambassadors on the Continent, suggest that the building of houses on sites which are held for limited terms, is one of the peculiar institutions of Great Britain. The division of agricultural land among a large number of small proprietors is a great evil, according to some English economists. McCULLOCH said that "France was converted by means of it into a pauper warren," and that opinion has been often supported. But building land stands in a different position, and the possession of a small site in the suburbs of a town is not open to the objections which advocates of farming on a large scale can bring against the French and Belgian *petite culture*. Every one but proprietors are aware that building suffers by the leasehold system. In the first place, it is only necessity, or the expectation of large profit in a limited time, that makes a man build on a terminable lease, and owners of such buildings of late years find greater difficulties in disposing of them. The reasons for retaining the system are so unimportant, it may be supposed that the publication of the Foreign Office reports is but an indication of an attempt to grapple with a system which has had a malign influence on English architecture.

DURING winter evenings, when in so many houses defective lighting adds to the discomforts of life, it will be well to bear in mind a suggestion which was offered by Mr. HAROLD DIXON in one of his Cantor lectures. Coal gas as an illuminant would be much more popular with English people if the makers of the globes which are commonly sold could be persuaded to make the openings through which the air enters just about double as large as they have made them. Openings of  $2\frac{3}{4}$  inches and 2 inches are quite common, and they are found as small as  $1\frac{3}{4}$  inches. Now, what is the effect of a globe with so small an opening on the burning of gas? The air comes in with a rush to the flame, and is thrown into eddies in pouring through the narrow orifice. Consequently, the flame is forced first on one side and then on the other, and it is in a continual state of flickering—always on the quiver, never still for half a second. It is this continual flickering when one is reading that is the chief objection to coal gas as an illuminant, as we find it in most houses. Mr. DIXON says that if the opening is made big enough the flickering entirely ceases.

THE manufacture of iron and steel has always been a favourite pursuit of the Americans. The total production of the iron and steel works of the United States in 1880 was 7,256,140 tons, while in 1870 it was 3,655,215 tons, showing an increase of 3,609,925 tons, or 98.76 per cent. The production of pig iron in the United States reached its highest point in 1882, when 5,178,122 net tons, or 4,623,323 gross tons were produced. In 1883 the production was nearly as large, amounting to 5,146,972 net tons, or 4,595,510 gross tons (a net ton is 2,000 lbs., and a gross ton is about 2,240 lbs.). At the close of the year 1882 there were 417 furnaces in blast and 270 out of blast. At the close of the year 1883 there were 307 in blast and 376 out of blast. But few of the largest furnaces were blown out in 1883, the capacity for production, therefore, not being reduced as compared with 1882.

ACCORDING to Mr. BLODGETT, the American statistician, Philadelphia is primarily a city of residence, and its manufacturing is adapted to and in harmony with its character as such, and it is neither built nor occupied as manufacturing cities are elsewhere. No part of the city area is crowded as European manufacturing cities are. There is not one tenement house in it, nor is there any single locality in which employment is enforced or compulsory at any one industry. There are no narrow lanes, with squalid occupants living on the smallest possible wages, and there is no exclusive occupancy or oppressive localisation in any part of the city. Philadelphia would consequently seem to be a desirable place for architects. The population is nearly a million, about 25 per cent. of whom are directly engaged in productive industries. According to the latest returns there are 156 architects and builders in the city, which, considering the elastic nature of statistics, does not appear to

be a sufficient number. Architectural woodwork gives employment to 35 men, who produce work that is valued at 66,000 dollars. Eleven artists are engaged in copying oil pictures, and they add 38,000 dollars to the returns. The value of the bricks is put down at three millions.

A "SMOKE ROCKET" has been designed by Mr. COSMO INNES, of the London Sanitary Protection Association, and its use is proposed as an effectual means of discovering leakages in drains. It has not been patented. The rocket is filled with a composition by Mr. PAIN, the maker of fireworks, and as one will burn for about ten minutes, there is sufficient time for the inspector to light the fuse, insert the rocket in the drain, insert a plug behind it, and walk through the house to see if the smoke escapes at any point, finishing on the roof, where he will find the smoke issuing in volumes from the ventilating pipes. If it is considered necessary to increase the severity of the test, a wet cloth can be thrown over the top of the ventilating-pipe. Experiments have been made with the rockets in unoccupied houses in Kensington, and they sustained the test, as the whole of the smoke issued from the top of the pipes; but it would be well to use the rocket in a house that was known to have defective drains. The invention appears to be a handy and useful addition to sanitary appliances.

THE necessity of having agreements stamped was shown lately in a case which was sent from the High Court to be heard in the Gloucester County Court. A carpenter, who was a specialist as a staircase hand, took a sub-contract from a builder for work in a house in Cheltenham. The architect declined to certify that the work of the staircases was satisfactory, and the builder refused to pay more money, maintaining that the sub-contract was taken on the same terms as the general contract, and by which the architect's certificate was indispensable to a settlement. When the agreement between the parties was produced in Court it was found to be without a stamp, and therefore could not be admitted as evidence unless a penalty of 10*l.* was paid. As the plaintiff declined to do so, he was non-suited, and the money which had been paid into Court by the defendant was allowed to be withdrawn.

Mr. T. N. DEANE, R.H.A., has discovered the remains of a large church among the ruins of Mellifont Abbey in Ireland. There seems to have been no record of the existence of the building (which is in the early thirteenth-century style), and the discovery is regarded with much interest by archæologists.

A VERY good programme for the ensuing session has been got up by the Council of the Society for the Encouragement of the Fine Arts. Between January 29 and June 11 there will be lectures on "Welsh Music," "Wall Papers," "Folk-lore and Music of Old Japan," "Physiology in Art," "English Art," "Architecture in the Nineteenth Century," "The New Æsthetics and Footprints of the Beautiful." There will be three conversazioni, and when it is considered that all that has to be paid is a guinea a year, the Council are again justified in saying that no other society provides a more happy combination of instruction and entertainment for so moderate a subscription.

AN important arbitration case is being heard before Sir HENRY A. HUNT, with Sir FREDERICK BRAMWELL and Mr. JAMES ABERNETHY as arbiters, at the Surveyors' Institute, Westminster. Already several days have been occupied. The plaintiff is Lord BLANTYRE, who claims 100,000*l.* from the Clyde Trustees for damage to his property, which is adjacent to the river. It is alleged that a training-wall which had been erected many years ago has caused a tendency to deposit mud on the land, and one of the points in dispute is whether a part is to be considered as belonging to the river bed. The depreciation of Lord BLANTYRE's mansion-house is among the items. Mr. DEAS estimated the amount at ten per cent., or 16,926*l.*, Mr. BUCHAN at 18,400*l.*, and Mr. SELLARS agreed generally with the estimates. The cost of Erskine House was 64,000*l.*, which, it appears, is one hundred and eighty years' purchase of the annual value entered in the valuation lists.









INK-PHOTO SPRAGUE & CO LONDON

THE HISTORY OF ART.

DECORATIVE FRIEZE

BY MONS<sup>IEUR</sup> FRANÇOIS EH RMANN









INK-PHOTO. SPRAGUE & CO. LONDON.

AN INTERIOR  
DESIGNED BY E. F. C. LAY  
SHOWING JAPANESE DECORATION & BY



910th 1885.



OR .  
ARCHITECT.  
SR. ROTTMANN, STROME & CO







## ILLUSTRATIONS.

THE HISTORY OF ART.

THE splendid frieze which we reproduce this week is the work of M. FRANÇOIS EHLMANN, an artist who ranks among the leading decorative painters in France. It was M. EHLMANN'S design which was carried out as the adornment of the French department in the late Amsterdam Exhibition. The frieze that is illustrated surrounds a cupola over a staircase in the house of M. GÉRARD, Place St.-George's, Paris. A few remarks on the subject will be found elsewhere.

## AN INTERIOR.

THIS illustration is taken from a water-colour drawing by Mr. E. F. C. CLARKE, which was shown in the Health Exhibition. The original suggested how much use could be made of the wall-paper and decorative articles which have been imported from Japan by Messrs. ROTTMANN, STROME & Co., of St. Mary Axe; but the illustration labours under the drawback of not being suggestive of colour. We have already described Messrs. ROTTMANN, STROME & Co.'s warehouse, which is unparalleled in London or in any of the Continental cities. It is only by a visit that one can realise what magnificent papers are now produced, under the direction of the firm, by Japanese artists. But wall-papers form but a part of the collection in the warehouse, which is a perfect emporium of the costliest and the cheapest kinds of Japanese art workmanship.

## THE ARCHITECTURAL ASSOCIATION.

THE sixth ordinary meeting of the Association was held on Friday evening, the 2nd inst., Mr. Cole A. Adams, president, in the chair.

Mr. SLATER was elected a member by acclamation.

Mr. SHUFFREY was to have read a paper, but at the last moment begged to be excused for unavoidable reasons.

The PRESIDENT opened a discussion on architectural education, and how to improve and make more efficient the system of the Association. In discussing the question he desired the junior members to take precedence. The chief points in the President's paper may be summarised as follows:—

## Architectural Education.

The PRESIDENT began by showing what other learned professions had done in the way of education, and how no member of such professions could hope to rise to high distinction who had not devoted all his energies to acquire his knowledge, both theoretical and technical. But, till lately, architects had followed on the old lines, and not recognised the enormous progress in education going on around them. What the Association had done, and the examinations by the Institute, proved a want was felt, and that architects were beginning to see that if they were to hold their position at all as a learned profession they must qualify themselves to meet all the difficulties of modern practice. Iron and bridge construction, and much else where science of construction on a large scale was concerned, had drifted away from architects. Decoration had gone into the hands of specialists, who were not architects. To win back what was legitimately theirs, they must qualify themselves, and so prove to the public their competence. In art and literature men had won foremost places by their own efforts, and in art and literature it might be proved that the man who succeeded must be born, not made. But science formed a necessary part of architecture, and science could and must be taught by system. The day for the old argument, that systematic and academical education was unnecessary was past and gone. Society was educated, and would take nothing for granted; they required to know the why and the wherefore. Criticism was cast in all directions. Sanitary questions cropped up on all sides, and specialists rose up to answer them. The public demanded special knowledge to be brought to bear. Neither natural instinct nor any slipshod system would succeed. The President said the question for the evening was, Whether the education of the architect could be improved, and if so, how?

The Association, justly proud of what it had done in the past, was considering how to improve and make more effective its system. Courses of lectures to prepare candidates for admission to the Institute by examination had been instituted. The members who gave the lectures received a slight remuneration in no way commensurate with the demands made on their time and skill. This had been a departure from the honorary basis on which instruction in the Association rested. It was a

natural outcome of the Institute examination, and had done good service. The classes under honorary teachers had done excellent work, but must necessarily fall short of producing a uniform standard of excellence. Necessarily, also, the teachers constantly changed, nor could they be expected to give up their time, year after year. To the question of how to supplement their system and make the instruction more thorough, there seemed only this answer, that they must secure the services of men, qualified professors of the subjects they teach. By all means, said the President, let us keep our classes, careful only in the selection of those who preside over them, but let us go further and try and obtain lecturers to deal with those special subjects which can only be properly taught by men trained to speak with the authority of experience, and qualified to impart their knowledge to our students. We are at once met with the question, Where is the money to come from that will make it worth while for men capable of teaching to give up their time to undertake the post of lecturers? I think, if we are in earnest about it, the thing may be done. The Royal Institute of British Architects was founded for the promotion of the art of architecture; but beyond establishing an examination for admission to its ranks, it has done, as far as I can gather, nothing for education. Is not the present time, when such great changes in its constitution are under discussion, one for meeting this question of education? To what better use could funds of the Institute be put? How better can it raise itself in the eyes of the profession, gather men into its body, and make itself great, powerful, and respected, than in extending by its funds the opportunities for acquiring knowledge? The fact that an examination for admission to the Institute is compulsory surely demands that the Institute should place before students some of the means for passing that examination. I believe an educational scheme would commend itself to the members of the Institute, and that if a committee of the Institute and the Association were formed, and ways and means discussed, a course of lectures by competent men might be set on foot, and the two bodies would be drawn together on a footing which would not interfere with the constitution and independence of either, but only result in good for both, and a closer alliance for strength and resistance against those who have made and are busy making inroads upon us. The Institute would gain in popularity, would commend itself more to the sympathy and support of its members and the profession, and gather students to its meetings and lectures; the Association would be more valued, and admission to its ranks would be even more sought after than it is at present. The standard of education would be raised, and the men who came under the influence of it would in turn make it felt abroad, and little by little the public would come to recognise that to be an architect, properly qualified to carry out the work entrusted to him, requires that a man shall be properly and systematically educated in the various branches of his profession, and that only those who possess this knowledge will stand a fair chance of employment. There is no reason why, in the large centres of industry in the provinces, a modified system such as I have sketched should not be established. One thing is clear—if we do not, no one else will.

Mr. A. B. PITE said as to the question of architectural education, he failed to see in what special arts our leading architects, by whom English architecture must stand or fall, needed education. Architecture resulted in the survival of the fittest. The beautiful buildings of the past remained, the bad had disappeared. It seemed needless to take trouble about bad architecture in the present, as art would kill it. The public required educating more than architects. He was glad that the public had made a step in this direction, and learned that there was such a thing as style. There was no better test of the efficiency of methods of architectural training than the test of results. Over and over again they had heard of the superiority of the Continental systems over our own. Judged by the test of results, English architects, acquainted with the work done abroad, would never be ashamed to hold up our own school of architecture against the schools of France, Germany, or Italy. Methods of education abroad might be superior to ours, but the results certainly spoke in our favour. Our great architects had picked up their knowledge in a haphazard way from miscellaneous sources, but knowledge so gained was sorted out in order in the architect's mind. Though you might educate a man in sanitary science and in all branches of scientific architecture, so to speak, you would not make an architect of him. You might put into his mind what would make him a builder, a surveyor, and the like, but you could not put art into him. So the question came, In what must you educate the young architect? Their own system in the Association seemed to be in a particularly healthy state, for no one came and attended the classes but such as were really in earnest to succeed. The system could hardly be improved in any specific way, but competition could be encouraged by enhancing the value or number of prizes. Mr. Pite moved a vote of thanks to the President for the paper he had prepared at so short a notice.

Mr. MILLARD spoke of the time wasted in training an



architect, who spent more years in getting his knowledge than he need do if an efficient system of education existed. If they agreed that a systematic training was necessary, what kind of system should be followed? No two men were alike, and any system adopted must clearly be one sufficiently elastic to suit itself, as far as possible, to all varieties of students' minds. The main system here was pupilage. A pupil was articled to an architect for a term of years. But why not article a pupil for one year, and make it optional to renew the engagement year by year? A parent withdrew his son from school after a year's trial if he found no benefit was derived. Again, the architect's pupil, instead of taking one subject after another in order, had many subjects all at once, from superintending building works to designing ornament. The average student could not master all at once, and the question arose, In what order should he take them? He would send him to an art school first, and to an office afterwards. To an art school to learn drawing, and accustom his eye to delicacy of proportion, as well as to find out what was really in him, instead of crushing the life out of him by practical matters that should come later. If the student showed artistic tendencies, they should be aroused and developed; practical matters would easily be acquired when the need for them came. In the office he should be allowed the experience of carrying out some work, however small—a lodge, for instance, under the guidance of his master, of course, but doing the whole himself, the design, the specification, acting as clerk of works, &c. He would thus get the money worth of his premium, and leave the office with some definite knowledge. The difficulty would be to get into a good office. The Association might possibly found a scholarship to enter a man into one of the best London offices. Leading architects would, no doubt, readily listen to a request from the Association. But they should not make one scholarship or travelling studentship the limit. Students of to-day would be the architects of to-morrow, and what was done now would influence the architecture of the next fifty years. Enthusiasm was an essential to success. There was plenty of it; men were ready to work, but they wanted guidance—a leader who would exert his influence over them, such as Arnold at Rugby, Newman at Oxford, Gordon in Khartoum.

Mr. FARROW said he remembered a passage in which Sir Gilbert Scott or Mr. Street had said that artistic buildings existed not on account of their artistic qualities but on account of their good building, and that good building and good architecture were concurrent, and so what was bad was swept away. As to men of genius becoming great architects, and their knowledge having being acquired in a haphazard way, it should be remembered that they paid a high price for it, and passed away at an early age, like Mr. Burges, Mr. Street and others. Their work would have been easier, their life longer, and their art would not have been less, had they had the advantages of systematic education. Mr. Pite spoke as an artist, but their art was not only art but a profession and a science. Art might be inborn, but science could be learned, and a scientific education, as the President pointed out, required systematic and careful study. In some professions students were grounded first of all in the theoretical branches, and afterwards in the practical; this was the case in the army and navy. In other professions, as in the legal, the two were combined as far as possible together. In Austria, a boy of sixteen, on leaving school, entered a technical high school for a course of study, then an academy of fine art, where only the principles of art and design were taught. The following year he went as a journeyman bricklayer, carpenter, &c., then entered an architect's office for a year, and next spent a year in the army. The Austrian received a practical, and as far as could be, an artistic education. The system did not reduce men to one dead level, but enabled a man to find out what he was best fitted for, and also accounted for what seemed so extraordinary in Austria, namely, the extent to which specialists were employed. The ideal course of instruction, he thought, should be scholastic education for a period of years, followed by training in an architect's office, and afterward practical work at the carpenter's bench, acting as clerk of works, &c.

A letter was then read from Mr. Blashill, who was unable to attend. He advocated the necessity of real work, and instanced a prominent feature in the training of medical students, viz., walking the hospitals. Windy orations and too much archæology he condemned. Medical students went to sleep in the lecture-hall, but were all energy when in the dissecting-room.

Mr. LOVEGROVE said that no other profession in this country allowed its members to learn its mysteries in such a piecemeal way. Looking at the buildings abroad, one could see that the men who built them had received an academical training. He did not agree with Mr. Pite's remarks with regard to inborn genius superseding the need of training, for one did not find a poet was a worse poet for having graduated. He would like more attention to be given by the Association to the teaching of the principles of design, apart from the question of style, and also to see a more extended course of study of deco-

ration, and to see it aim at more thoroughness and completeness in the course of education, that they might at least be equal in culture to those around them.

Mr. SLATER held that students left school too young, and with their minds not sufficiently trained to take in what they had to learn afterwards, and too young to know what their professional bent really was. This point ought to be impressed on the public, as parents thought—they did not think so with regard to other professions—that putting a boy of fourteen years of age in an architect's office was all that was necessary to fit him to do a great deal of complicated work in the future. Mr. Slater urged the great importance of languages, which opened so many stores of knowledge to the student. The earnest students who attended the classes of the Association were not the only persons who became architects. A great number of students did not come to the classes or go elsewhere, because they did not know where to go, and for these something must be done. The lectures proposed by the President would do much good.

Professor T. ROGER SMITH said he could not remember the long list of members in the Brown Book without feeling that competition among architects would be very great in the future, and that those would rise to the top of the profession who had availed themselves to the utmost of their advantages. He agreed with Mr. Slater on the necessity of a certain amount of culture before entering the profession at all. For instance, they should be able to pass with facility the local examinations in connection with the Universities. No method would in this country succeed so well as articling the student or putting him in some way into an architect's office, for he must, as Mr. Blashill said, be brought in contact with practical work. Before entering the office they should spend some time in an art school and learn to draw the human figure respectably, and perhaps have a slight knowledge of colour. The next six months might be passed at the carpenter's bench to learn how working drawings were carried out, &c. As to practice, a great deal must be superadded, and for that in part they would come to him at University College, where the work was tolerably continuous or systematic, each class going on week after week, taking up their subjects in rotation, and getting a certain amount of knowledge, which they would add to afterwards. In the Association, as far as utilising the facilities already offered, he suggested they should aim at some such continuity of study as practised in the University College. Some recognised order might be established, or, perhaps even better, an office created to be filled by a "students' friend"—a person who would see what the student knew and what he did not, and sketch out a course of study suited to him. Mr. Roger Smith concluded by endorsing Mr. Slater's ideas as to languages, and suggested that the Association might do something in the way of freehand drawing—a thing not to be learnt in an office; and thought a class of drawing from the antique might be started, as also a joiner's shop.

Mr. TARVER spoke in favour of the plan suggested of articling a pupil by the year.

Mr. LAWRENCE HARVEY said that if Mr. Norman Shaw had been taught in a French Academy, he would never have been the architect that he now was. Before entering the profession a student should be taught all sciences that bore on building. Parents often put their sons into the profession thinking it was a paying business. But it was not. To enter the profession a man must have such a love of architecture that he was determined to be an architect even if he were to be poor. If anyone wished to make money by architecture his advice was that they should not know more about architecture than they could help. Let them try rather to be an amusing companion at the dinner-table, and to be able to tell a clever story, &c.

After a word or two from the President, the vote of thanks was, on the motion of Mr. Pite, carried by acclamation, and the proceedings terminated.

### THE ROYAL ACADEMY.

THE following students have been admitted in the classes in the architectural school:—

*Upper School.*—F. S. Capon, H. Cresswell, E. J. G. Dawber, G. Horsley, A. B. Pite, A. D. Smith, H. J. Westell.

*Lower School.*—P. Anderson, N. W. Allen, R. S. Ayling, W. H. Boney, W. A. Burr, W. L. Buxton, F. M. Day, H. P. B. Downing, L. Dennis, H. Druery, L. R. Ford, C. Gill, G. Harvey, F. H. Hitchin, W. H. Howie, H. Hutchings, A. R. Jemmett, A. J. Lancaster, W. Leck, H. C. Manning, F. W. Marks, F. Masey, C. L. Meadway, W. Newton, R. O. B. North, W. R. Schultz, A. Steinthal, Van Straaten, A. Sykes, A. S. Taylor, J. B. Thorpe, F. G. Webb.

*Probationers.*—W. Alford, A. E. Barnsley, F. D. Bedford, W. T. Cave, F. Davison, C. D. Fitzroy, P. N. Ginhams, J. E. Inglis, F. J. James, G. L. Jones, G. T. McCombie, R. F. McDonald.



## PETERBOROUGH CATHEDRAL.

THE reply of Mr. E. A. Freeman to the letter of Sir Edmund Beckett contains the following observations on the general question of restoration:—It seems to me, as to many others, that our great churches and other works of ancient architecture are—subject, of course, to the needs of their practical use—beyond all things historical monuments. It is not our business either to improve on them out of our own heads or to try to bring them back to the state in which we may fancy them to have been 400 years back, or 500 years, or any other date that may best suit our private tastes. The historical monument has commonly been made what it is by a series of changes which form its history. The result of that history is the building as it stands. In that shape it is an historical possession. The question of dealing with quite modern changes may admit of fair differences of opinion; but surely, as a general rule, all changes at least down to the middle of the seventeenth century are part of the continuous history of the building. All should be preserved. Nothing but the most urgent practical need can justify any interference with any of them. The personality, so to speak, of the building, that which gives Peterborough or any other great building a character of its own, is the result, not of the work of any one period, but of the combined work of all periods.

Preservation may in some cases involve reconstruction. If I rightly understand the case at Peterborough, the mid tower was taken down in order to save it from falling down. This was a thoroughly conservative process, undertaken to preserve the history and personality of the building. But in order to carry out this conservative work the rebuilding should be simply a rebuilding—a putting back of things into the state in which they were before—and that, as far as may be possible, with the old stones. It is not fair to turn this necessary work into an opportunity for making something new—for turning the building into something different from what it is, something like what it may have been in the thirteenth or any other century, or something into which somebody may improve it in the nineteenth century. We do not want a new minster of Peterborough, even though it were to be much better than the present one. We want to keep that minster of Peterborough which is the result of the actual history of Peterborough, that minster which I for one have known for more than forty years, and which has for me a personality of its own which any change in its outline would disturb.

Thus far the argument is common to Peterborough with all other ancient buildings. But there are further special reasons against in any way interfering with the outline of Peterborough Minster as it lately stood. The church once had a Romanesque mid tower. This is a very noble feature at Norwich; it may well have been equally noble at Peterborough. But the history of the two churches has been different. Norwich has never had anything to be called a west front. The mid tower is more than the centre of the building; it is the main feature which rules everything; one might almost say it is the building itself. The addition of the most beautiful west front that could be designed would be undesirable at Norwich, for it could not fail to destroy the existing outline—an outline in which the single great tower is everything.

At Peterborough the history has gone the other way. Everything was changed by the addition of the western portico, to my mind the noblest work of the building art. That portico is at Peterborough all that the tower is at Norwich, and more also. It is the main feature, the characteristic feature, that which makes the church what it is. But it is yet more. There are other grand mid towers besides Norwich; but the portico of Peterborough stands by itself in the whole world. There is nothing like it, nothing second to it. When the mid tower fell, it was a gain; a tall tower rising behind the portico could never have harmonised with the peculiar character which the addition of the portico had given to the church. That portico is a Greek conception translated into Mediæval detail. It has given the building an outline which is rather Greek than Mediæval. The ruling lines are horizontal. A tall tower is as much out of place as if it were added to a Greek temple. When, therefore, the tower fell, the existing convent of Peterborough, whether wittingly or unwittingly, did wisely in not rebuilding it. They marked the crossing and no more. They gave the church the outline which the addition of the portico made necessary. Since that time the characteristic and unique feature of the church has reigned in its solitary majesty. I can conceive no greater offence against art and history than to add anything to Peterborough Minster that can disturb its supremacy.

I earnestly trust, then, that the Chapter will abide in the mind in which I found a majority of that body on December 9. Let them rebuild the low mid tower exactly as it was, only making Dean Kipling's turrets a little lower. They are really by no means bad. Builders of his day often caught an outline more happily than their successors, who knew more of detail.

Sir Edmund Beckett seems pleased with his work at St.

Albans, and it seems that Mr. Fergusson is pleased too. There is no accounting for tastes. When I heard that Sir Edmund had been to Peterborough I fell into a Mediæval vein, and pictured to myself St. Peter of Burgh greeting his approach with some such words of welcome as "Wilt thou kill me, as thou killedst my brother Alban yesterday?"

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

## NAPOLEON ON ARCHITECTURE AND "THE MADELEINE," PARIS.

EVERYONE knows that the Madeleine is one of the principal buildings in Paris. A chapel stood on the site from time immemorial. A church was erected there in 1487, and it was supplanted by another in 1659. A new building was undertaken in 1763, according to designs by Contant d'Ivry, but the architect died before the works were completed. His successor, Guillaume Couture, prepared new plans and demolished all the masonry which had been executed. Then came the Revolution. Napoleon wished to transform the building into a Temple of Glory, in which the statues of his chiefs could be placed, and the records of his campaigns inscribed on plates of metal and marble. There was a competition among architects, and the design of M. Vignon was selected by the Emperor. The following interesting letter on the subject was addressed to the Duc de Cadore, and it suggests that Napoleon was as prescient in relation to architecture as to war or codification. The letter becomes more remarkable if we recollect that at the time it was written Napoleon was making preparations for the great battle of Friedland, and that a few months before he had been defeated at Eylau:—

"Finkemstein: 30th May, 1807.

"Monsieur de Champagny,—After having attentively examined the different plans of the monument dedicated to the grand army, I have not been one moment in doubt. That of M. Vignon is the only one which fulfils my intentions. It is a temple that I demanded, and not a church. What could be done in the style of churches to surpass St. Geneviève or even Notre Dame, and, above all, St. Peter's at Rome? The project of M. Vignon unites with many advantages that of agreeing much better in style with the palace of the legislative body, and of not humiliating the Tuileries. When I fixed the expense at three millions (120,000*l.*) I wished it to be understood that this temple ought not to cost more than that of Athens, the construction of which did not cost half that sum. It appears to me that the Court entrance ought to be by the staircase opposite to the throne. In the definitive plan M. Vignon will manage so that we may descend under cover. The apartment, also, must be as handsome as possible. M. Vignon might, perhaps, make it double; for the hall is at present too long. It will be equally easy to add a few tribunes. I will have nothing in wood. The spectators ought to be placed, as I said, on marble steps, forming amphitheatres destined for the public. The persons necessary for the ceremony will be placed on benches, so that the distinction between the two classes of spectators may be very sensible. The amphitheatres, filled with ladies, will form a contrast with the grave costume of the personages necessary for the ceremony. The tribune of the orator ought to be permanent, and of beautiful workmanship. In this temple nothing ought to be movable or changing; every thing, on the contrary, ought to be stable and fixed in its place. If it were possible to place at the entrance of the temple groups of *The Nile* and *The Tiber*, which were brought from Rome, it would have a good effect. M. Vignon must endeavour to introduce them in his ultimate plan. The place must also be selected for the armour of Francis I., and the *quadriga* of Berlin. There must be no wood in the construction of this temple. Why may not we employ for the dome, which has been an object of discussion, iron, or even earthen pots? Would not these materials be preferable to wood? In a temple destined to subsist several thousands of years the greatest solidity possible must be studied, and every thing avoided that may be subject to criticism; and the greatest attention paid to the choice of materials. Granite or iron ought to be those of this monument. It may be objected that the present columns are not of granite; but this objection is not a good one, because in time they may be changed, without injury to the monument. Yet, if it were proved that to use granite would cost too much, and be too long in obtaining, we must renounce it; for the principal condition of the project is that it shall be executed in three or four years, or at the most five. This monument has a political object; it therefore should be terminated quickly. It will be well, however, to seek for



granite for other works which I shall order, and which, from their nature, may occupy thirty, forty, or fifty years in finishing. I intend all sculptures in the interior to be of marble. Do not propose to me any sculptures fit for the drawing and dining-rooms of the wives of Paris bankers. Whatever is futile is not simple, noble; whatever is not of a long duration is unfit for this monument. I repeat that there must be no kind of furniture in it, not even curtains. As to the plan which has gained the prize, it does not reach my ideas; it was the first that I rejected. It is true I gave for a basis to preserve part of the monument of the Magdalen as it exists; but this expression is an ellipsis—it was to be understood that whatever was possible should be preserved, otherwise there would have been no need of a programme; it was only necessary to execute the original plan. My intention is not to have a church, but a temple; and I neither wished that all should be pulled down nor preserved. If the two propositions were incompatible, namely, that of having a temple or preserving the church of the Magdalen, it was right to attend to the definition of a temple. By temple I mean a monument, such as there was at Athens, and as there is not at Paris. There are many churches at Paris; these are in every village. I should not have taken it ill if the contradiction had been pointed out between having a temple and preserving what was intended for a church. The first was the principal idea, the second only accessory—M. Vignon, therefore, divined what I meant. As to the expense fixed at three millions, I do not make it an absolute condition; I wished to be understood that I would not have another Pantheon—that of St. Geneviève has already cost about fifteen millions. But, in saying three millions, I did not mean that a million or two more should enter into the comparison with having a more or less beautiful monument. I might, if necessary, order five or even six millions; the definitive plan will regulate this.

"You will not fail to tell the fourth class of the Institute that it was in its own report that I discovered the motives which have determined me. On which I pray God to have you in His holy keeping."  
"NAPOLEON."

#### AN ENGLISH INCOHERENT EXHIBITION.

The exhibitions of "Incoherent Art" which have been lately introduced in Paris are not original, although they are supposed to be a special product of French wit. As far back as 1762, that is, seven years before the opening of the Royal Academy, an exhibition of the kind was held in Bow Street, Covent Garden. It was organised by Bonnel Thornton, who was the leading spirit of the *Connoisseur*. He was aided by William Hogarth. In 1762 the Society for the Encouragement of Arts, Manufactures, &c., and the Society of Artists, proposed to hold exhibitions, and for fun Thornton got up a third, which was declared to be under the auspices of the Society of Sign-Painters. It was announced that it was to contain "a most magnificent collection of portraits, landscapes, fancy pieces, flower pieces, night pieces, scripture pieces, &c., &c., designed by the ablest masters, and executed by the best hands in the kingdom." It was also declared in the gravest manner that the worshipful sign-painters were not prompted by any mean jealousy of the members of the other societies, for, "animated by the same public spirit, their sole view is to convince foreigners, as well as their own blinded countrymen, that however inferior this nation may be unjustly deemed in other branches of the polite arts, the palm for sign-painting must be universally ceded to us, the Dutch themselves not excepted." The strange sight that was presented to the visitors may be imagined from the description in the *London Register* of that time:—

"On entering you pass through a large parlour and paved yard, of which, as they contain nothing but old common signs, we shall take no further notice than what is said of them in the catalogue, which the reader will not find to be barren of wit and humour. On entering the grand room, you find yourself in a large and commodious apartment, hung round with green baize, on which this curious collection of wooden originals is fixed flat, and from whence hang keys, bells, swords, poles, sugar-loaves, tobacco-rolls, candles, and other ornamental figures, carved in wood, which commonly dangled from the pent-houses of the different shops in our streets. On the chimney-board (to imitate the style of the catalogue) is a large blazing fire, painted in water-colours; and within a kind of cupola, or rather dome, which lets the light into the room, is written in golden capitals, upon a blue ground, a motto disposed in the form following:—

SPECTATUM  
TENEATIS  
ADMISIT  
RISUM

"From this short description of the grand room (when we consider the singular nature of the paintings themselves, and

the peculiarity of the other decorations), it may be easily imagined that no connoisseur who has made the tour of Europe ever entered a picture gallery that struck his eye more forcibly at first sight, or provoked his attention with more extraordinary appearance."

The pictures were remarkable. Thus, for example, *The Irish Arms*, by Mr. O'Blaney, represented a pair of extremely thick legs in white stockings and black garters; *A Man* was a view of nine tailors at work; *Nobody alias Somebody—a Character*, was an officer all head, arms, legs, and thighs. But, according to the *Register*, "the cream of the whole jest is No. 49 and No. 50, its companion, hanging on each side of the chimney. These two are by an unknown hand, the exhibition having been favoured with them from an unknown quarter. Ladies and gentlemen are requested not to finger them, as they are concealed by blue curtains to preserve them. Behind the curtains are two boards, on one of which is written 'Ha! ha! ha!' and on the other 'He! he! he!' At the opening of the exhibition, the ladies had infinite curiosity to know what was behind the curtains, but were afraid to gratify it. This covered laugh is no bad satire on the indecent pictures in some collections, hung up in the same manner with curtains over them." An opportunity was offered to amateurs to display their skill in identifying the works, and it was stated that "a remarkable *cognoscente*, who has attended at the society's great room with his eyeglass for several mornings, has already piqued himself on discovering the famous painter of *The Rising Sun* (a modern Claude) in an elegant night piece of the Man in the Moon." The *St. James's Chronicle* of that day could not see any humour in the exhibition, and the charge of a shilling was said to be a swindle; and, after a condemnation of the affair, wound up by saying:—"In fine, this exhibition is a most scandalous abuse and bubble. The best entertainment it can afford is that of standing in the street and observing with how much shame in their faces the people come out of the house."

#### METROPOLITAN WATER SUPPLY.

THE reports of Mr. J. T. Harrison, C.E., one of the engineer inspectors to the Local Government Board, on the sources of water supply to the metropolis have been issued. The author believes that an abundant supply of water of unexceptionable quality can be obtained and delivered by the companies (more especially those who take water from the Thames) to the consumers without adding to, but not improbably diminishing, the annual cost which they at present incur. Mr. Harrison suggests that a supply should be derived from that part of the chalk formation within the watershed of the Thames which lies to the north and west of Windsor, including the areas within the basins of the rivers Kennet and Colne. This gathering ground occupies upwards of 1,100 square miles, or, say, 700,000 acres, and varies considerably in elevation. The saturated chalk contains one-third of its bulk of water. The chalk formation thus forms, at the same time, an extensive gathering ground of a very permeable character, and an enormous reservoir coextensive with the surface, and in some places several hundred feet in depth. The existence of such a reservoir and the fact that water passes very slowly, except by fissures, through the chalk formation, explain how the perennial flow of the Thames is equalised and its continuance insured even after a long-continued drought.

A large receiving-well might be constructed at Black Pots, near the main road from Eton and Upton to Datchet, with an overflow into the Thames below the Windsor Lock. The summer level of the Thames below this lock is 51.33 feet above Ordnance datum. From this well a tunnel might be driven westward, by Chalvey Grove and the West Town Farm, to the Thames near Bray, 12 feet in diameter for a considerable length (say one mile), rising 1 foot 6 inches per mile, thence diminishing, as it might be found desirable, to 10 feet, 8 feet, 6 feet, and 4 feet in diameter, with the same inclination; the invert of the tunnel being raised at each break from the Black Pots, where it is 40 feet above Ordnance datum, or about 16 feet below the summer level of the Thames above Windsor Lock. This design would, of course, be modified very considerably should a more definite scheme be prepared, and after borings have been sunk and the position of fissures, as far as possible, ascertained. It will probably be found desirable to sink wells into the chalk at various places near the tunnel, and to drive headings northward from it. It is quite impossible at present to determine exactly what should be done. The tunnel should be below the summer level of the Thames throughout its length, and should be carried in the chalk and below the gravel. It would probably be found convenient to construct the main carrier before driving the gathering tunnel, in order to carry off the water during the execution of the work; but this is a matter of detail and of cost only, to avoid pumping.

The five companies who take their supply from the Thames draw it from the same reach of the river. The summer level



of the Thames is here about 23·38 feet above Ordnance datum. The overflow weir, constructed at the lower end of the main carrier, should be several feet above this level, so that the water could be conveyed in 4 feet cast-iron mains to the pumping wells of each company. The length of these distributing mains would be about two miles. Two of them would have to be carried across the Thames.

This well and overflow weir might be constructed near the Grand Junction works at Hampton, and a main carrier between this well and the well at the Black Pots, Windsor, might be built. This main would be 12 feet in diameter, and 11 miles long, with an inclination of 1 foot per mile; the invert at Hampton being 20 feet above Ordnance datum, and 31 feet above it at the Black Pots. It may be found desirable to carry this main at a little lower level, in order to form it in the clay at a sufficient depth below the gravel. In that case, when in operation the main carrier would be quite full and slightly under pressure. The tunnel should be lined with 14-inch brickwork in cement, with shafts or manholes at about every quarter of a mile. It would be easy to take in water from the gravel at some of these shafts, if it were, in consequence of the character of the water or otherwise, found desirable to do so.

A strip of land, 100 feet wide, should be purchased the whole length of the main carrier and the collecting tunnel; and power should be obtained to sink wells at any points throughout this length, and to drive headings or drifts, for the collection of water, in any direction throughout an area of about five miles by four miles in the neighbourhood of Farnham Royal, Maidenhead, Bray, Windsor, and Slough.

The purchase of land and the cost of the works required to collect the water, to convey it to Hampton, and to distribute it to the pumping stations of the several companies, would probably amount to about 700,000*l*.

The annual cost of filtering the water taken from the Thames for the supply of London is 8,424*l*. As no filtration would be required, this annual expenditure would be saved. Several of the reservoirs would be rendered useless, and, as they occupy valuable sites, the annual cost of maintaining them and the value receivable for the sites should be put against the cost of the proposed works. The water companies pay at present 10,000*l*. a year to the Thames Conservancy Board, but Parliament will probably relieve them from this payment if the supply were taken from springs instead of from the Thames.

### THE LATE MR. R. M. PHIPSON.

IT is with regret we announce the death of Mr. Richard Makilwaine Phipson, of Norwich, an architect who gained the esteem of every one who met him, whether on business or in relation to archaeology.

Mr. Phipson, says the *Ipswich Journal*, was a well-known figure throughout East Anglia, the struggle of youth and early manhood being associated with the capital of Suffolk, and the success of mature years more particularly with the cathedral city of Norwich. Old Ipswichians, especially gentlemen of archaeological tastes, talk with enthusiastic pride of a certain young man who, more than thirty-five years ago, gained the esteem and confidence of his fellow-townsmen by his devotion to archaeological pursuits and his clever architectural designs. Young Phipson was articled to the late Mr. W. Clarke, the architect of the Ipswich Custom House and other buildings. On the decease of his employer, Mr. Phipson acquired the practice, and locating himself at the Ancient House, he rapidly developed the business. The famous relic chosen for his office was judiciously restored under his superintendence, all the ancient historic characteristics being most carefully preserved. The earlier years of the church restoration era found Mr. Phipson in the front rank as an ecclesiastical architect. Among his notable designs was that for the rebuilding of St. Mary Tower Church, Ipswich, and many Suffolk churches were enlarged and restored under his supervision. In domestic architecture, also, he was extensively employed, the Foundation Street Almshouses, Stoke Hall, Ipswich, Brandeston Hall, and other mansions testifying to his success in the profession he had adopted. Although not an artist, Mr. Phipson steadily promoted the occasional exhibitions gathered together by the efforts of Mr. Stephen Jackson, Mr. F. B. Russell, Mr. R. Burrows, and other local pioneers of the art exhibition movement. Mr. Phipson continued to reside in Ipswich until 1859. At the Norfolk October Quarter Sessions he was the chosen of twenty candidates for the appointment of surveyor to the county of Norfolk. Subsequent to his removal to Norwich, Mr. Phipson designed the present St. Giles's Church, many public buildings in the city and county, and numerous Norfolk churches. He held from 1871 the joint appointment of diocesan surveyor under the Ecclesiastical Dilapidations Act. Mr. Phipson was a member of the Norfolk and Norwich Archaeological Society, and of the Suffolk Institute of Archaeology and Natural History. Numerous papers from his pen

appear in the journals of these societies, and in that of the British Archaeological Society. He undertook and successfully carried through the arrangements for several visits of the parent association to East Anglia. Mr. Phipson married the daughter of the late Mr. George Bullen, surgeon, Carr Street, Ipswich, who survives him.

### THE ABERDEEN ART GALLERY.

THE late Mr. Alex. M'Donald, of the Aberdeen Granite Works, has, subject to the life-rent of his widow, bequeathed to the Town Council of Aberdeen on behalf of the community his collection of oil paintings, pen-and-ink drawings, and etchings, together with a third of the residue of his estate. The collection is a large and valuable one, including two works of Mr. Millais, two of Mr. Alma Tadema, Mr. Orchardson's *Napoleon on Board the Bellerophon*, several of Hook's sea pieces, and works by Joseph Israels, G. F. Watts, Jules Breton, P. D. Chalmers, George Reid, and others. The feature of the collection, however, is a portrait gallery of living artists, among these being Sir Fred. Leighton, Millais, Watts, Israels, Breton, Pettie, Orchardson, Tadema, Oulless, and Gregory. This gallery now numbers about eighty heads. Mr. M'Donald hoped that this collection, which has been the first attempt in this country to gather together the portraits of contemporary artists, might continue to be regarded as a pleasant and unique historical record of the artistic talent of the time. He desired to record that but for the hearty co-operation and interest in the undertaking by the artists themselves he could not have hoped to attain so satisfactory a result.

The whole collection of Mr. M'Donald's pictures is to be kept separate and distinct from other pictures in the gallery, and each picture is to be specifically labelled as part of the bequest. The third of Mr. M'Donald's estate bequeathed to the town is to be invested, and the revenue derived from it every third year is to be applied in the purchase of works of art for the Art Gallery. The revenue of the two years is to be added to the principal, and the fund is to be thus treated so long as the law will allow such accumulations, after which the whole of the revenue is to be set apart and applied in the purchase of paintings. In accordance with the will, no pictures painted more than twenty-five years before the date of purchase shall be eligible for purchase; no direct commission shall be given to any artist, but all pictures shall be finished before being considered eligible; and that in the purchase consideration is to be had only to the intrinsic merits of the work. The purchase of pictures and the whole management of the collection are to devolve upon an art committee of twelve members, eight to be appointed by the Town Council and four to be appointed by the Senatus of Aberdeen University.

The value of the art collection thus bequeathed to the city of Aberdeen is estimated at nearly 13,000*l*., and it is conjectured that a third of the residue of Mr. M'Donald's estate amounts to about 15,000*l*.

### HOUSE TENURE IN FRANCE.

IN last April Earl Granville asked the representatives of Great Britain on the Continent to obtain reports upon the system of tenure of dwelling-houses in the respective States where they resided. The information has now been printed. The following is Sir John Walsham's report on the French system:—

Since the Revolution of 1789 all property in France, whether urban or rural, is freehold ("franc-alieu"); that is to say, so long as there is no contravention of the law as regards the welfare of the community at large, the right of owners of property to deal with it as seems best to them is free and absolute.

By Article 537 of the French Civil Code, "Les particuliers ont la libre disposition des biens qui leur appartiennent sous les modifications établies par les lois;" and by Article 544 of the same Code, "la propriété est le droit de jouir et de disposer des choses de la manière la plus absolue, pourvu qu'on ne fasse pas un usage prohibé par les lois ou par les règlements."

According to statistics, land in France consists of some 28,000,000 holdings, divided amongst 5,000,000 proprietors, and each one of these 28,000,000 holdings can be sold or let at the good pleasure of the proprietor. Entail does not exist in France, and children share alike the real and personal estate of the parents.

With respect to the question of selling or letting property, the provisions of French law are equally applicable to urban and rural property, and considerable latitude is allowed to vendors and lessors as regards the conditions they may desire to attach to sales or leases, provided always that these conditions do not in any way interfere with police, municipal, or state regulations, and do not contravene either existing servi-



tudes and prescriptions, or infringe the rights and privileges of neighbours.

A lease is regarded by French law as a simple contract between two parties, into which any conditions may be introduced, subject to the above-mentioned general restrictions.

In France property can be sold, and is not unfrequently sold in small lots so as to enable persons to build houses on it. These sales may be unconditional, in which case the purchaser is bound by such restrictions only as are of usual application to buildings of all kinds, and refer to the character of the work done, to sanitary arrangements, and to the consideration due to neighbours.

On the other hand, the vendor may sell, subject to the reservation of an annual rent or other periodical payment, and with or without the right of redemption. He is also at liberty to require that the purchaser shall complete the building within a given time and in a particular manner. Such restrictions are set forth in a deed of sale, and are terminable only with the deed. In other words, the vendor is entitled in perpetuity to have the clauses of the covenant executed, and such right would descend to his heirs, or to his legal representatives; and where the vendor has parted with the whole of his property for building purposes, the purchaser of one lot can be prevented by any of the other purchasers from infringing the restrictions imposed on all alike, and can oblige the offender to replace, in the condition specified by the contract, any work that may have been done in violation of it. For instance, if a purchaser shall have covenanted or agreed to use a house as a private dwelling-house only, and shall subsequently turn it into a shop, the tribunals would, on application from one or more of the neighbours, at once summarily order the shop to be closed, and damages to be paid in case any detriment had been caused through the infringement of the covenant. Should any one of the purchasers be in the act of constructing a building of a kind opposed to the provisions of his contract, complaint may be laid before a judge by the other interested parties, or by one or more of them, and a simple order from the judge would be sufficient to stop the works until the matter could be submitted to a court, which, if an infringement of the contract were proved, could give directions for the removal of the building, and, in addition, grant damages.

Instead of being sold in building lots, land is sometimes let for a term of years upon condition that houses are built upon it; that an annual or other periodical rent is paid by the lessee; and that at the end of the term the houses shall become the property of the landlord. When land is so let, whether in town or country, the restrictions imposed on the lessee are, as in the case of the vendor, more or less those which the lessor may himself determine.

Like the vendor, the lessor has great latitude allowed him in such matters, so long as strict regard is paid to the requirements of the law in respect of whatever concerns public order and police regulations.

Where there is a written contract, the lessor, once the lessee having accepted any conditions inserted in the contract, can obtain redress in Court; and in the event of the lessee having dealt with the property in a way other than that specified in the covenant, the lease can be annulled. Moreover, in addition to damages, the landlord can claim payment of rent for the period during which his property may remain unlet.

Where the lease is a verbal one, the respective positions of landlord and tenant are determined by local usage, which also determines, in the case of verbal leases, the duration of such leases, as neither the landlord nor the tenant can terminate them except in accordance with the custom sanctioned in the particular locality in which the property is situated.

With respect to the length of the leases, when property is let for building purposes on condition that the houses at the end of the term become the property of the landlord, it is usual to calculate it on the probable income to be derived from the houses. The calculation is based on the principle that the lessee should not only obtain an annual income varying from 4 to 6 per cent. of the capital expended, but that the money laid out on the buildings should be redeemed.

It would be very difficult to fix an average for the duration of this kind of lease, much depending on the commercial, industrial, and social conditions of a particular locality.

In Paris there is land which has been let on good terms for the period of thirty years. Large dwelling-houses have been built upon it, which have realised excellent profits for the lessees, and are now doing the same for the landlords into whose hands the houses have come. As a general rule, however, building leases of this category exceed thirty years. They are not usually accompanied by any special stipulations, but very generally contain a "cancelling clause," enabling the landlord to annul the lease and to resume possession of his property in the event of the tenant failing to perform the conditions of the lease. Formerly it would appear that the application of this cancelling clause was not very strictly enforced; but at the present day the tribunals would give summary effect to its provisions, while empowered to deal

leniently with such tenants as have failed to carry out their contract from misfortune rather than from want of good faith.

These special building leases are unquestionably at the present time found to exist more frequently in the neighbourhood of towns than in the country.

Land is not sufficiently remunerative to make it worth while to rent it even on a long lease with the obligation to build on it.

## MANCHESTER ARCHITECTURAL ASSOCIATION.

AT the ordinary meeting held at the Old Town Hall, January 6, 1885, Mr. J. Spencer Hodgson in the chair, Mr. A. H. Davies Colley read a paper on "Stained Glass Windows." He described the different processes of colouring glass, together with the characteristics of the various periods. He considered the drawing should be as good as possible, and strong in outline, bringing out the true character of the design, the shading of figures to be avoided as much as possible, which should be entrusted to artists. Windows to the north should be warmer in tone than those to the south. A discussion followed, in which Messrs. Barker, Chadwick, Ward, Charleywood, and Hodgson took part.

## EARLY PERSIAN RUINS.

A LETTER from a correspondent of the *Times*, who accompanies the Afghan Frontier Commission, gives an account of some remarkable ruins which have been passed on the journey. Our route, he says, has been almost entirely along the right bank of the river Helmund, and has never before been traversed by a European traveller, although points on it were visited by Ferrier and by General Goldsmid's party. The two marches to Rudbar were along the winding bank of the river, enclosed between high sand hills, and generally concealed from view by thick tamarisk jungle. Here and there we came across alluvial bays formed by the receding sand hills and the river. One or two of these—Lundi, for example—supported small villages, but generally the country was deserted and barren. The ground, generally hard and gravelly, was often covered with bits of red pottery, which may or may not have been relics of ancient times, but it was not till we nearly reached Rudbar that there were any ruins worthy of notice. At Rudbar we encamped between two forts, which belong to two cousins of Ibrahim Khan, of Chakansur. The place has apparently dwindled in size and prosperity since General Pollock's visit. Here we come across the first evidence of Timur's savage invasion of Seistan in the ruined canal of Karshasp, the last of the Peshdadian kings, which used to water all southern Seistan. There are many other mementoes of Timur's visit in Seistan. The local tradition is that he was lamed for life by an arrow shot by a Seistani, hence the ruin and havoc he wrought.

The last few miles of our road to Rudbar lay through the ruins of canals, forts, and palaces, which have been described by General Pollock's companion, Dr. Bellew. These are supposed to mark the site of Caicobad, the capital of Cyrus's empire. One of the most interesting of these is the "Kila-i-Madar-i-Padshah"; *Anglice*, the palace of the king's mother, which is supposed to occupy the site of the residence of Cyrus's mother. I shall continually have to mention ruins, for the whole of the valley is covered with ruins of large cities, and if I describe the building I have referred to the description will suffice for all. They have a strong family resemblance, being all of mud—generally sun-dried—bricks, without a beam or a stone in the whole structure. The ruins seem to date from three distinct periods, beginning from the old Persian time when clay was used as the principal material. These are distinguished by their enormous dimensions and by the complete effacement of all their original features; they form large mounds of clay, which in some cases still show the general plan of the city; but the effacement is so complete that it is difficult to distinguish between artificial and natural mounds. Many were the references to our geologist, Mr. Griesbach, who, by the way, has taken some very successful photographs of the more remarkable ruins. The second period was apparently one when burnt brick was a comparatively common building material. The valley is covered with bits of red and yellow brick. It is difficult to say over what date the brick period extended; the only remains of buildings sufficiently well preserved to justify an inference seem to date from the sixteenth century. The third period is well marked by lofty mud walls in fairly good preservation. The palace of Cyrus's mother at Rudbar is, as I have said before, a good specimen of this period. It is a large quadrangular building, rising out of the sand which conceals the basement of its walls, with high towers at the angles and bastions flanking the walls. Inside is a hall of audience,



mosque, inner citadel, and several minor buildings. The whole is built of sun-dried bricks; there are no signs of wood having been used, but there are many baked bricks about, and the fact that the mud of which the walls are made contains bits of baked bricks leads to the conclusion that the structure stands on the site of an older building. It was probably destroyed by Nadir in his struggle with the Kaiani chiefs of Seistan. This is probably the date of the ruin of the other buildings and cities, though there are local traditions of a great flood having deluged the land.

The other more remarkable ruins are Kila-i-Futeh, Nadali, and Sar-o-tar. Some coins and ornaments, belonging principally to the early Caliphate, but also a few to the Greek, Sassanian, and Parthian periods were brought to our camp for sale by the Beloochees, who search the ruins after rain. Traces were also found of an early Hindoo occupation. What a field for an antiquarian with pickaxe and spade? Whatever may be the date and origin of these ruins, it is evident that the valley of the Helmund once supported a vast population dwelling in large, handsome cities—indeed a contrast to the present time when a few Beloochees living in huts of tamarisk are its sole occupants.



#### Semper's Theory of Evolution and its Practical Utility.

SIR,—It is impracticable to make a handbook for school-boys out of the "Principia" of Newton. Could we not go a step further and declare that, for any use we get out of it, Newton would have done as well never to have written his book? Such is the kind of logic a Mr. "Cui Bono" addresses in the year of our Lord 1885 to English architects, as a commentary on Professor Baldwin Brown's admirable letter on Semper's book, "Der Styl."

I recognise in "Cui Bono" an Englishman of the average kind, an enemy to theoretical speculation, who settles every question by asking whether it does pay. If it were not for the comforts and the profits which steam and electricity have provided for him, he would—before this century the "Cui Bonos" did—pronounce the study of the laws of nature mere waste of time, and men of science harmless fools like Vitruvius and Gottfried Semper.

To such men, and they are numerous, the proof of the pudding is the eating; it is the only proof they will listen to, for they are content to be wise after events. As I began the study of architecture under the direction of Semper, and have discussed his theories with all kinds of people ever since, my work must bear evidence of my master's training. The best answer, therefore, I can give to the objections of the "Cui Bonos" is to lay one of my works before them, and make an honest and full confession of the motives which decided every part of my design. I hope to prove thereby, firstly, that Semper's teaching leads to liberty, aye, to taking liberties with architecture undreamt by Semper himself; for as soon as the spirit of inquiry is abroad, those who have let it loose are no more masters to say, "So far shalt thou go and no further." Secondly, I will show that this glorious liberty due to Semper's teaching is far removed from anarchy, but that it submits to broad and subtle laws, which it obeys without feeling any constraint, because they appeal to our reason, not to authority of either past or present men. There is the same difference between Semper's teaching and the old cut-and-dry instructions of the Five Orders as there is between the Christian spirit of charity and the old Mosaic commandments of the Decalogue, or even better, the rough-and-ready laws of our police courts. With the one, a man has an interior monitor which penetrates in the most hidden corners of his conscience; with the others, he is kept from glaring acts of dishonesty; but he may yet be an arrant knave if he manages to keep within the four corners of the law, and smugly congratulate himself upon his righteousness. But, let us add, the simile holds good further. Just as man is still far removed from perfection after nearly nineteen centuries of Christianity, and that great moral differences exist amongst the faithful, so it is with art. The true principles may assist an artist to attain a higher level than he otherwise would have done, but they supply not either imagination or the delicacy of nerves with which artists are born, and, therefore, it does not follow that Semper's pupil will produce a better design than other people. It suffices for my purpose to have shown that my work has been materially affected by Semper's teaching, which is the test "Cui Bono" requires.

As the drawings take some time to prepare, allow me, Sir, to give rendezvous to Messrs. "Cui Bono" & Co. in a future number of *The Architect*.

LAWRENCE HARVEY, A.R.I.B.A.,  
Pupil of the late Professor Semper, Medallist of the  
Paris Ecole des Beaux-Arts.

#### Stuart and Revett's "Athens."

SIR,—It may interest your readers to know that the letters and proposals relating to the publication of Stuart and Revett's "Athens" are collected in a volume of the Camden Society's publications, entitled, "Letters of Eminent Men: edited by the late Sir H. Ellis. 1843."

The originals from which these letters are taken are among the additional manuscripts in the British Museum. The printed copies in the Camden publications are of wide and varied import. They are dated 1752, and are from a Mr. Hollis, who made the classical tour of Greece, and who wrote from Venice to urge on the publication of Stuart's "Athens."

The prospectus itself of these learned authors' is of great literary interest, enumerating in detail the illustrations, some of which could not have been carried out in the published volumes. It also has a list of the drawings made of the antiquities of Pola.

As the documentary history of great architectural works is often deficient, such memoranda as are here preserved enhance the value of so noted a book on classical art and architecture.

I am, Sir, yours, &c.,

January 8, 1885.

S. WAYLAND KERSHAW, F.S.A.

#### SANITARY WORKS.

**Sanitary Inspection.**—A meeting of the Association of Public Sanitary Inspectors was held at the offices of the Society, Adam Street, Adelphi, on Saturday evening. Mr. Jerram presided. Mr. E. C. Robins, F.S.A., read a paper on "The Growing Importance and Responsibility of Public Sanitary Inspectors." While commending the work of the Association, the author said the call for action on their part was the increasing interest of the public in sanitary matters. Some of the duties which sanitary inspectors were called upon to perform were evidence of the variety of technical knowledge and experience required of them. The present position of the sanitary inspector had not improved in proportion to its importance and responsibility, and it should be made more independent of the local authority. To entitle the sanitary inspector to the confidence of the public, educational classes should be organised by the Association, which should become a source of educational advancement to the younger members. To accord with the temper of the times, they should be willing to submit themselves for examination to some recognised sanitary authority, whose certificate of competency should have a distinct money value as a testimonial meritoriously acquired. The secretary (Mr. Samuel C. Legg) opened the discussion which followed. It was generally agreed that sanitary inspectors should have large practical experience, and that educational classes for young members should be formed. Mr. Jerram intimated that the council were in communication with the Sanitary Institute on the question of educational classes and examinations, with a view to joint and therefore more effective action. A vote of thanks to Mr. Robins concluded the meeting.

#### REVIEWS.

**TECHNOLOGICAL DICTIONARY IN THE ENGLISH AND GERMAN LANGUAGES.** Edited by GUSTAV EGER. 2 vols. Brunswick: Vieweg & Son. London: Trübner & Co.

The language of the French will probably retain its old influence as time runs on, but since German is the key to treasures of thought and is the speech of a race that seems destined to rival the English in colonising power, a knowledge of it is becoming indispensable. At the beginning of the century it was hardly known beyond the limits of the states that constituted what was called Germany; now it is to be heard in almost all lands. German merchants and manufacturers are opening foreign markets, and one of the best proofs of their rivalry with their English competitors is seen in the massive volumes which have been prepared by a staff of experts under the direction of Professor Eger. So much space is needed, because in commercial intercourse things have to be described which would be considered unnecessary in an ordinary dictionary. It may suggest the number of terms which are comprised, when it is said that under the head of "iron" there are about seven columns of words. German is unrivalled among modern languages for flexibility. There is no difficulty about introducing new words and new constructions whenever they become necessary, and hence German translations of foreign works are unrivalled for fidelity, while, on the other hand, it is difficult to represent a German book in the words of another language. The ease with which words are formed makes a complete general dictionary almost an impossibility. In a very large one edited by a medical professor which is before us, we find no word for Daltonism, or colour-blindness (in Herr Eger's book we have the expressive "Farbenblindheit"),



and the clear "Lichtbild," and hundreds of similar words are omitted. Errors are also made, such as giving "Rechantisch" for abacus, when it is only to the counters used in schools that the German word applies. Herr Eger comprehends every technicality that is likely to be required in commercial correspondence, or in the speech of business men. Thus, a Chubb's lock is included, becoming "das Chubschloss," and it is described, "eine Art Sicherheitsschloss, nach seinem Erfinder benannt." The dictionary is clearly printed in legible type, and many readers will probably be more pleased at finding the old German letters have been supplanted by Roman. The volumes, so far as we have been able to test them, are marked by the strictest accuracy, and they will be invaluable in business houses. A work of this kind suggests the relation between English building terms and their equivalents in German and French. It would seem that there is a nearer affinity to the latter. Thus we find that, even in spelling, there are several words which are identical in French and English. Among them are structure, plan, construction, arcade, base, balustrade, joint, vestibule. Then there are others which are so close that they are readily identified, such as matériaux, brique, mortier, ciment, plâtre, gypse, stuc, voûte, pilastre, colonne, chapiteau, corniche, rampe, mortaise, charpente, sommier, latte, gouttière, linteau, seuil, &c. If we take the words which are considered essentially Saxon, and compare them with German, they are suggestive of a good many transformations since the Teutonic race left its northern home. The following will serve as examples:—Building ("Bauen"), shed ("Schuppen"), wall ("Mauern"), door ("Thür"), roof ("Dach"), floor ("Fussboden"). Hammer denotes the same thing in both languages, but who could recognise kinship between saw, plane, chisel, adze in the corresponding German words?

### CHURCH BUILDING AND RESTORATION.

**Winslow.**—The church of St. Lawrence has been reopened after restoration carried out by Mr. G. Cooper, builder, Aylesbury, under the direction of Mr. J. Oldrid Scott. The gas pendants and standards were supplied by Messrs. Barrett, Birmingham; the wrought-iron work by Mr. Skidmore, of Coventry. An oak reredos has been erected by Messrs. Farmer & Brindley, of London. The font is of Caen stone, with Purbeck marble shafts, executed by Mr. H. Terry, London, the cost of which has been contributed by the children of the parish.

**Wylam.**—The foundation-stone of a church has been laid at Wylam, in the parish of Ovingham. The church has been designed by Mr. R. J. Johnson, of Newcastle, and will be constructed of stone, and of late Gothic style. It will consist of nave and chancel, organ chamber, vestry, short aisle with nave and tower on the south side, and an open oak porch. Accommodation will be afforded for about 250. The builder is Mr. Walter Scott, of Sunderland.

**Glencorse, N.E.**—The foundation-stone of a church for the parish of Glencorse, designed by Messrs. Wardrop, Anderson & Browne, architects, Edinburgh, has been laid. The ground plan shows a central nave, having upon one side, separated by an arcade of three bays, a long aisle, and on the other, separated by an arcade of two bays, a double transept. The estimated cost of the building is 2,700*l*. The builders are Messrs. J. & J. Turner, Juniper Green, Edinburgh. The clerk of works, Mr. Basil Slater.

### GENERAL.

**The Collection of Pictures** formed by M. van Lerijs, and principally composed of works by Antwerp masters, will be sold at Antwerp on February 19 and following days.

**Mr. Frank Holl, R.A.**, is painting a portrait of Mr. Wilson Barrett in the character of Hamlet. He has also been commissioned to paint the portrait of Mr. Fowler, the late Lord Mayor.

**The Institute of Painters in Oil Colours** on Wednesday evening elected the following artists members, viz., Mr. J. W. Waterhouse, R.I., Mr. F. D. Millet, and Mr. C. Napier-Hemy, R.I.

**Mr. John Kinross** will read a paper on "The Study and Progress of Architecture" at the meeting of the Edinburgh Architectural Association on Monday next.

**Two Large Hospitals** are about to be constructed in Tunis. The funds for the civil building will be derived out of the proceeds of the Tunisian lottery, which was well supported in France.

**The Manchester Town Council** on Wednesday adopted a recommendation of the Waterworks Committee to begin the works necessary for bringing the water of Thirlmere Lake to Manchester, powers for which were obtained five years ago.

**Herr Fritz Kaulbach**, the painter, has been ennobled by the King of Bavaria. He is the son of the famous artist, Wilhelm Kaulbach.

**Mr. J. D. Linton** has nearly completed his picture of the wedding of the late Duke of Albany.

**The Art Loan Exhibition**, opened at Brighton last October, closed on Saturday last, without bringing any profits in aid of the local art school.

**The Sidney Cooper School of Art**, Canterbury, will be reopened on the 22nd inst. Sir Frederick Leighton, P.R.A., and Mr. Millais, R.A., have been invited for the occasion.

**Mr. George Scharf**, Keeper of the National Portrait Gallery, is to be appointed a Companion of the Bath.

**A Memorial Pulpit** of marble and alabaster, designed by Mr. J. A. Chatwin, of Birmingham, and executed by Mr. Bridgeman, of Lichfield, has been placed in Aston parish church.

**The Wimborne Minster Restoration Committee** report that the debt for the work on the towers has been cleared off, and about 150*l*. received towards the fund for the restoration of the transepts.

**Mr. Petrie** has discovered extensive remains at a spot seven miles from Jeh El Barood, on the line of the railway from Cairo to Alexandria, and has identified them as marking the site of the ancient Naucratis mentioned by Herodotus. He has also proved that this city did not stand, as stated by the historian, upon the Nile, but upon the old Canal.

**The Kilmarnock Art Union** has sold tickets amounting to 385*l*. 17*s*. 6*d*., out of which 360*l*. has been expended on prizes.

**On Wednesday** a cheque for 11,720*l*. was sent to the Liverpool Corporation from Sir A. B. Walker, to cover the cost of the extension of the Walker Art Gallery.

**The Old Parish Church, Crewkerne**, is to be restored, and the works contemplated are estimated to cost 3,000*l*.

**A Carved Oak Reredos** is to be placed in St. John's Church, Blackpool. The carving will be done by Mr. John Roddis, of Birmingham, from the designs of Messrs. Garlick & Sykes, of Blackpool.

**The French Minister of the Interior** has decided to have a convalescent home for workmen constructed at Vincennes, for the benefit of men leaving the asylum.

**The Reredos in Winchester Cathedral** is to be restored, at an estimated cost of 4,000*l*., as a memorial of the late Archdeacon Jacob.

**M. Lenders**, who represented Belgium at the Health Exhibition at South Kensington, has been nominated a Chevalier of the Order of Leopold.

**The "Garden of the Hesperides,"** by Rubens, left England within the past few days, its destination being a well-known collection at Paris.

**The Edinburgh Dean of Guild** has inflicted a fine of 3*l*., and expenses, on a firm of builders for commencing to build a dwelling-house in Balcarres Street, without a warrant from the court.

**M. Fichet**, a contractor of St. Gilles, has obtained the first prize of 500,000 frs. in the Arts Décoratifs lottery.

**A Large Portion of Norfolk Street, Werneth**, gave way on Tuesday night, and sank into what appears to have been an old pit-shaft. The collieries thus brought to light have been disused for half a century.

**The Local Tait Memorial** at Canterbury will for the present be confined to the erection of the sedilia in the cathedral. The scheme for a reredos has been abandoned, owing to a difference of opinion as to removing or retaining the eastern screen.

**Messrs. E. & H. Martin** have commenced business as auctioneers and estate agents at 93 Gracechurch Street, London, E.C.; also at Grays, Essex, and Southend-on-Sea.

**Messrs. C. Isler & Co.**, of 88 Southwark Street, London, S.E., have received orders to deepen the existing well for the supply of the town of Andover, by means of a 15-inch artesian bored tube well.

**The Tamworth Arms Hotel**, Moor Street, Birmingham, has recently been entirely rebuilt from the designs of Mr. Oliver Essex, A.R.I.B.A., at a cost of about 3,500*l*. Mr. W. Robinson, of Birmingham, was the builder.

**The Guardians** of the Billesdon Union, acting as the sanitary authority of the district, met on Monday, the 5th inst., to appoint an engineer to advise them upon a scheme of drainage for the districts of Humberstone and Evington, suburbs of Leicester. This important matter has for some time occupied the attention of the local authorities. The guardians, after due consideration, have appointed Mr. J. B. Everard, Assoc. Mem. I.C.E., advising engineer.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JANUARY 10, 1885.

## AUCTION SUMMARY.

For the Week ending January 17.

MONDAY, 12th, and following days:—

*Messrs. Furber, Price & Furber.*—Contents of Alexandra Palace and Grounds.

WEDNESDAY, 14th:—

*Messrs. Toplis & Harding.*—Building Estate, Lewisham.

FRIDAY, 16th:—

*Messrs. Baker & Sons.*—Building Land, City Road.

*Messrs. Frank Lewis & Co.*—Waterside Premises and Freehold Land.

## APPOINTMENTS VACANT.

SHANGHAI.—The Shanghai Gas Company require an Assistant Engineer. Salary to commence at 350*l.* per annum, with additional allowances. Free passage out and home. Mr. Geo. J. Yeo, Engineer and Secretary, 10 Dalton Chambers, 41 John Dalton Street, Manchester.

SODBURY.—Jan. 12.—Applications are required for the Appointment of a Surveyor. Salary 300*l.* per annum. Mr. J. Trenfield, Clerk to the Highway Board, Chipping Sodbury.

WEST BROXTON.—Jan. 13.—Applications are required for the Appointment of a District Surveyor to the Highway Board. Applications to be sent to the Clerk's Office, Crypt Chambers, Chester.

## COMPETITIONS OPEN.

CHELSEA.—Feb. 25.—Plans are invited for Additions to the Vestry Hall. Premiums of 100, 50, and 30 guineas. Mr. J. Elsdell Salway, Clerk of the Vestry, King's Road, Chelsea.

CROYDON.—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100*l.*, 30*l.*, and 25*l.* for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

KING'S NORTON.—Jan. 15.—Plans for the Erection of Four Cottage Homes upon Lands situate at Shenley Fields are required. Mr. Ralph Docker, Clerk of King's Norton Union, Colmore Row, Birmingham.

KING'S NORTON.—Jan. 15.—Plans are invited for the Erection of a Laundry, at the Workhouse, Selly Oak. Mr. Ralph Docker, 57 Colmore Row, Birmingham.

LONDON.—Jan. 15.—Architects experienced in the designing and erection of factories or breweries, and desirous of taking part in a limited competition, are invited to send a statement of the nature and extent of their experience in such work to Y. Z., 1,245, Advertising Offices, 167 Fleet Street. The proprietor proposes to select not fewer than six or more than twelve competitors. A member of the Council of the Institute of Architects has undertaken to assist him in the choice of names, the preparation of the instructions and conditions of competition, and the selection of the designs.

LONGTON.—Feb. 20.—The Longton School Board are about to erect two sets of schools at Normacott and Florence, each to accommodate 700 scholars (220 boys, 220 girls, and 260 infants), and invite architects in the Potteries and Newcastle to send in designs and estimates. Mr. Geo. C. Kent, Clerk to the School Board, Longton.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.

## CONTRACTS OPEN.

ASHTON-ON-MERSEY.—Jan. 27.—For Leveling, Paving, Metalling, and Channelling Streets. Mr. A. McKenzie, Surveyor, Broomfield Road, Hale, near Altrincham.

BALBY WITH HEXTHORPE.—Jan. 14.—For Furnishing Desks and other Apparatus for Board School. Messrs. Wilson & Masters, Architects, Hartshead Chambers, Sheffield.

BARNLEY.—Jan. 13.—For Building Warehouse and other Works, for the British Co-operative Society. Messrs. Wade & Turner, Architects, 10 Pitt Street, Barnley.

BARNLEY.—Jan. 16.—For Building Offices, Reading Room, Lecture Hall, &c. Mr. William Senior, Architect, 3 Regent Street, Barnley.

BEDFORD.—Feb. 24.—For Plans and Specifications and Execution of Works in connection with Sewage Pumping at Outfall Works. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.

BEXHILL.—Jan. 15.—For Enlarging and Part Rebuilding Church of St. Mark. Messrs. Riches & Esam, Architects, Station Road, Bexhill.

BIRKENHEAD.—Feb. 5.—For Supply and Erection of Two Pumping Engines, with Pumps and Steam Boiler, at Spring Hill Waterworks. Mr. W. A. Richardson, Water Engineer, 50 Hamilton Square, Birkenhead.

BLACKBURN.—Jan. 10.—For Supply of Material, Labour, Tools, &c., for the year, including Paving Setts, Sidestones, Channel Stones, and Circular Curbs, Flags, Ashlar Wall Stone and Landings, Stone for Underbedding and Hand-pitching, Granite (Macadam and Circular Curbs), Limestone (Cob and Broken) and Lime, Cement, Gravel and Sand, Bricks and Clay, Earthenware Pipes, Wrought Iron (Bar, Sheet, and Hoop) and Steel. Mr. J. B. McCallum, Borough and Water Engineer, Municipal Offices, Blackburn.

BLACKPOOL.—Jan. 14.—For Constructing and Laying Tramways along the Parade. Mr. T. Sunderland, Borough Surveyor, Town Hall, Blackpool.

BLACKPOOL.—Jan. 14.—For the Engines and Boilers required for the Electric Tramway Company. Mr. M. Holroyd Smith, Consulting and Electrical Engineer, Halifax.

BURNLEY.—Jan. 13.—For Building Business Premises for Messrs. Bayne & Son. Messrs. W. Waddington & Son, Architects, Grimshawe Street, Burnley.

CARLISLE.—Jan. 13.—For Rebuilding House and Shop in Botchergate. Mr. James Leslie, Architect, 27A English Street, Carlisle.

CLAINES.—Jan. 21.—For Supplying and Laying Cast-iron Pipes and Water Mains, Fixing Valves, Hydrants, &c. Mr. A. H. Parker, Surveyor to the Claines Local Board, 5 Foregate Street, Worcester.

CLAREMORRIS.—Jan. 14.—For Building Dispensary House and Medical Officer's Residence at Ballandine. Mr. Glover, C.E., County Surveyor, Claremorris.

COLCHESTER.—Jan. 10.—For Alterations and Additions to Offices of the Equitable Insurance Society. Mr. F. Evelyn Morris, Architect, West Stockwell Street, Colchester.

COLCHESTER.—Jan. 15.—For Building Shop in Long Wyre Street. Mr. J. F. Goodey, Architect, 2 Victoria Chambers, West Stockwell Street, Colchester.

CROYDON.—Jan. 10.—For Supply of Furniture, &c., for the Guardians. Mr. Alfred G. Blake, Clerk, 15 George Street, Croydon.

EAST RETFORD.—Jan. 23.—For Flagging and Blue Brick Paving Works in Bridge Gate, Moorgate and Grove Street. Mr. J. D. Kennedy, Borough Surveyor, East Retford.

EDINBURGH.—Jan. 15.—For Works in Construction of New Culvert in connection with proposed Diversion of a portion of the Lochrin Outlet Sewer near Haymarket Station. The Burgh Engineer, 1 Parliament Square, Edinburgh.

EXBOURNE.—Jan. 10.—For Restoration of Chancel, Building Organ Chamber and Vestry to Parish Church. Mr. R. Medley Fulford, Architect, The Close, Exeter.

EXETER.—Jan. 15.—For Forming Roads, Sewers, and Footpaths on Elmside Building Estate. Messrs. Packham & Croote, Surveyors, 93 Paris Street, Exeter.

FINCHLEY.—Jan. 19.—For Supply of Guernsey and other Hand-broken Granite (2,300 tons). Mr. G. W. Brumell, Surveyor to the Local Board, Church End, Finchley.

GAINSBOROUGH.—Jan. 14.—For Sinking Bore Hole for Water Supply of Town. Mr. C. Greenhaigh, Surveyor, Chapel Staithe Offices, Gainsborough.

GOOLE.—Jan. 19.—For Metalling, Levelling, Paving, Flagging, Channelling, and Draining certain Streets. Mr. E. C. B. Tudor, C.E., Local Board Office, Market Hall Chambers, Goole.

GLASGOW.—Jan. 12.—For Supply and Erection of a Malleable-iron Girder Bridge, to carry the Garvel Dock Lines over road from Greenock to Port Glasgow. The Engineer's Office, St. Enoch Station, Glasgow.

GREENWICH.—Jan. 12.—For Relining First-class Swimming Bath (Bricks and Tiles). Mr. Alfred Budds, Clerk to the Commissioners of Public Baths and Washhouses, Greenwich.



**HARDINGSTONE.**—Jan. 19.—For Construction of Sewers, Tanks, Buildings, and other Works in Connection, St. James's End. Messrs. Ingman & Sons, Surveyors, Hazlewood Road, Northampton.

**HECKMONDWIKE.**—Jan. 13.—For Extensions to Brunswick Mill. Mr. Samuel Wood, Architect, Heckmondwike.

**HEREFORD.**—Jan. 12.—For Supply of Cast-iron (Turned and Bored) Gas Pipes and Irregular Castings. Mr. William Parlbay, Gas Engineer and Manager, Corporation Gasworks, Hereford.

**HERNE BAY.**—Jan. 13.—For Building Board Schools. Mr. Thomas W. Collard, Clerk to the Herne School Board. The Institute, Herne Bay.

**HORSFORTH.**—For Purchase and Removal of Horsforth Old Church. Rev. T. R. W. Pearson, M.A., the Vicarage, Horsforth.

**INDIA.**—Jan. 13.—For Supply of Ironwork for Well Kerbs. The Director-General of Stores, India Office, Westminster, S.W.

**INDIAN RAILWAYS.**—Jan. 13.—For Supplying Ironwork for Waggon and Steel Fishplates. Mr. A. Abercrombie Jopps, Director-General of Stores, India Office, Westminster, S.W.

**LEITH, N.B.**—Jan. 10.—For Painting and Making Additions to Victoria School, Newhaven. Mr. George Craig, Architect, 85 Constitution Street, Leith.

**LEEDS.**—Jan. 12.—For New Boiler, 50 horsepower. Mr. Alf Cooke, Crown Point Printing Works, Leeds.

**LEEDS.**—Jan. 14.—For Continuous Fencing (800 yards), at Roundhay Park. Mr. T. Hewson, Borough Engineer, Leeds.

**LEEDS.**—Jan. 21.—For Building Extensive Warehouse Premises for Messrs. Goodall, Backhouse & Co. Mr. Thomas Winn, Architect, Victoria Buildings, 18 Park Lane, Leeds.

**LONDON.**—Jan. 20.—For Supply of Steel Rails, Fishplates, and Fastenings, Iron Sleepers, &c., Iron Roofing, &c., for South Indian Railway Company. Mr. H. W. Notman, Managing Director, 65 Gracechurch Street, E.C.

**LOCH LEAVEN, N.B.**—Jan. 20.—For the Supply and Erection of a Concrete and Iron Pier at Onich Bay, Loch Leaven. Mr. G. Woulfe Brenan, C.E., Argyll Square, Oban.

**LONDON.**—Jan. 12.—For Supply of Railway Chairs (500 tons). The Engineer, 5 St. Thomas Street, Southwark.

**LONDON.**—Jan. 13.—For Paving Footways of the Borough High Street, with 3-inch York paving, relaying with Asphalté footways of Blackfriars Road, St. George's Road, and Lambeth Road, round the Bethlem Hospital. Mr. A. Millar, Vestry Hall, Borough Road, S.E.

**LONDON.**—Jan. 14.—For Supply of Cast and Wrought Iron Piping, Valves, Fittings, Tools, &c., for the Madras Municipality. Messrs. Henry S. King & Co., 65 Cornhill, E.C.

**LONDON.**—Jan. 21.—For Supplying Wrought-iron Girder Bridges for the Southern Mahratta Railway Company. Mr. E. Z. Thornton, Secretary, 31 Lombard Street, E.C.

**LONG EATON.**—Jan. 21.—For Building House, Two Shops, and Offices, High Street; Three Shops, Odd Fellows' Hall, &c., Market Place; and Ladies Seminary and Mistress' House, Bridge Street. Mr. John Sheldon, Architect, Market Place, Long Eaton.

**LYNDHURST.**—Jan. 13.—For Erection of Stone Walling (350 yards) to Enclose Burial Ground. Mr. George S. Coxwell, Solicitor, Lyndhurst.

**MIDDLESBROUGH.**—Jan. 21.—For Building Engine House, &c., for Hydraulic Machinery at Docks. Mr. William Bell, Architect, Railway Offices, Northgate, Darlington.

**MIDDLESBROUGH.**—Jan. 24.—For Cast and Wrought Ironwork for Erection of Nine Through Beds of Retorts. Mr. E. D. Latham, Gas Offices, Middlesbrough.

**MIDLAND RAILWAY.**—Jan. 15.—For Supply and Erection of Ironwork required in the Construction of Two Bridges at Shipley, on the Leeds and Bradford Branch. Supply and Erection of Ironwork required for Four Bridges, on the Tibshelf and Teversall Branch, near Alfreton.

**MIDLAND RAILWAY.**—Jan. 15.—For the Supply, Delivery, and Fixing of Ironwork in Reconstruction of Bridge over Railway, Cleeve Station. Mr. A. A. Cangle, Engineer, Midland Railway, Derby.

**NETHERTON.**—Jan. 10.—For Superstructure of Church. Mr. Charles J. Ferguson, Architect, 50 English Street, Carlisle.

**NEWCASTLE-ON-TYNE.**—Jan. 16.—For Supplying Two Pumps to Workhouse. Mr. John W. Gibson, Clerk, Union Offices, Pilgrim Street, Newcastle-on-Tyne.

**NEWTON.**—Jan. 12.—For Extensive Additions to Severn Valley Mills. Mr. R. Hurst, Architect, Severn Street, Welshpool.

**NORMANTON.**—Jan. 23.—For Excavating and Laying 1,000 yards of 18-inch, 1,200 yards of 15-inch, 800 yards of 12-inch Earthenware Socket Pipes, and 270 yards of 21-inch Conduit Sewer, with Manholes, Lampholes, Junctions, and Ventilators, &c., and other works: also for 1,000 yards of 18-inch and 300 yards of 15-inch Earthenware Socket Pipes, taking up and relaying existing Sewer with Manholes, &c. Mr. Thomas Reid, C.E., The Grove, Normanton, Yorks.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Construction of Works in connection with Widening Main Line from Manors Station to Heaton Junction (1 mile 40 chains). Plans and Specification to be seen by Feb. 2 next, at the Engineer-in-Chief's Office, Newcastle-on-Tyne.

**NOTTINGHAM.**—Jan. 13.—For Construction of Covered Service Reservoir. Mr. M. Ogle Tarbotton, C.E., Water Offices, Peter Gate, Nottingham.

**PADIHAM.**—Jan. 14.—For Supply of Retorts, Fire Bricks, &c. Mr. J. R. Smith, Gas Manager, Local Board Offices, Padiham.

**PECKHAM RYE.**—Jan. 13.—For the Formation of 447 feet run of Tar-paved Walks, 6 feet in width, Peckham Rye Common. The Architect, Board of Works, Spring Gardens, S.W.

**PORTO RICO.**—March 22.—For Supply of Dredging Apparatus. The Spanish Consulate-General, 21 Billiter Street, E.C.

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3 Silver and 4 Bronze Medals



[Telephone No. 3,525.]

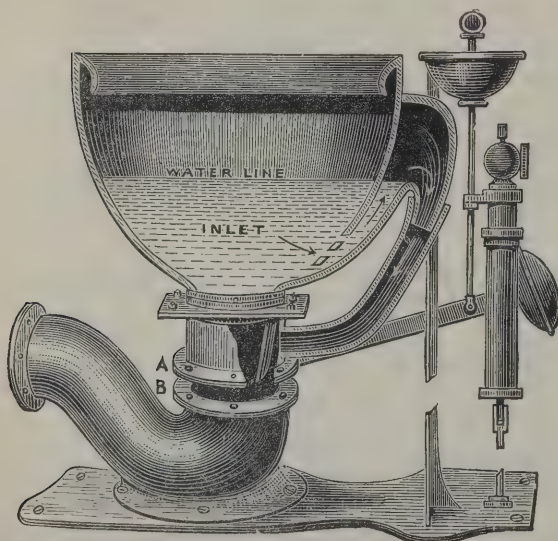
EXHIBITION, 1884.

Awarded for Sanitary Appliances.

# HENRY CONOLLY,

LIMITED,  
MANUFACTURING SANITARY ENGINEERS,

Call the attention of Architects, Surveyors, and Builders to their Closets, the advantages of which will be readily seen by the accompanying Illustration.



## THE "SAFETY" VALVE WATER-CLOSET,

WITH  
Conolly's Reversible Trap (Patent No. 3,754).

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged **A**; this is attached to a corresponding flange **B**, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the india-rubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

CAN BE SEEN IN ACTION IN NEW SANITARY SHOW-ROOM.

53 & 55 Hampstead Road, 169 & 171 Drummond Street.  
WAREHOUSES—TOLMER'S SQUARE, N.W.



## SALES BY AUCTION.

Alexandra Palace.—To Public Caterers, Restaurant and Hotel Keepers, Theatrical and Music-hall Proprietors, and others.

**MESSRS. FURBER, PRICE & FURBER** are favoured with instructions from the Directors of the London Financial Association to **SELL BY PUBLIC AUCTION**, at the Alexandra Palace, Wood Green, on Monday, January 13, and following days, at Ten for Eleven o'clock each day, the **FIRST PORTION OF THE CONTENTS OF THE PALACE**, comprising the capital office furniture and fittings of secretary's, manager's, clerks', and general offices in Spanish mahogany and light oak; three large fireproof iron repositories, the furniture of the public and private dining, lecture, and reading-rooms, saloons, buffets, of mahogany dining and other tables, sets of walnut wood and mahogany chairs, pedestal sideboards, large size Brussels carpets, noble plate chimney-glasses, seven full-compass pianofortes by the eminent makers—Messrs. Erard, Messrs. Holderness & Ascherberg, in mahogany and rosewood cases, a 14-stop harmonium by Messrs. Holderness, kettle and other drums, the contents of the central and great halls, bazaar, exhibitors' department, concert-room, corridors, skittle saloon, about 10,000 chairs, 250 garden-seats, pedestals, marble vases, &c.; a large assortment of plated articles in meat and other dishes, soup tureens, and following, most covers, about 300 dozen table-plate, cutlery, a large stock of table and other glass, china dinner and dessert services, table linen, and a quantity of culinary utensils, furniture, &c., of the servants' offices, cellars.—May be viewed on the Friday and Saturday prior to the Sale, by catalogues only (not each), to be obtained of Messrs. Marbury, Stewart & Co., Solicitors, 57 Coleman Street; of C. J. Hayter, Esq., at the Office of the London Financial Association, 1 Draper's Gardens, Throgmorton Avenue, E.C.; at the Wood Green Entrance Lodge; at Messrs. Furber, Price, & Furber's Office, at the Palace; and at the Auction and Estate Offices, Warwick Court, Gray's Inn, W.C.

Alexandra Palace.—To Public Caterers, Builders, Music Hall, Racecourse, and Circus Proprietors, Engineers, Printers, Florists, and others.

**MESSRS. FURBER, PRICE & FURBER** are favoured with instructions from the Directors of the London Financial Association to **SELL BY PUBLIC AUCTION**, at the ALEXANDRA PALACE, Wood Green, on Tuesday, January 14, and following days, at Ten for Eleven o'clock each day, the **SECOND PORTION OF THE PALACE AND GROUNDS**, including the contents of the great hall, bazaar, exhibition department, and corridors, of statuary, pedestals, ornamental garden-seats, a valuable cosmorama, vases, gongs, musical instruments, a model of Moorish and Turkish dwellings with life-size figures, a large magic lantern, a valuable music library, the printing plant of two gas engines, six printing presses, two cutting machines, galleys, iron chases, about a ton of type, and the usual materials, two nearly new 10 horse-power steam-engines, several working model steam-engines, models, capital turning lathes, engineers' tools, anvil, bellows, the contents of carpenters', painters', and smiths' shops, a large stock of miscellaneous stores, garden implements of iron rollers, lawn mowers, &c. The outdoor effects comprise numerous games, erection of swings, turn-stiles, ticket-boxes, 40 pleasure-boats, a large variety of carriages, carriages, carriages, four nearly new sleighs, erections of sheds, workshops, &c., a quantity of useful materials, iron fencing, notice-boards, and a very large collection of useful effects.—May be viewed by catalogues (only 6d. each) two days prior to morning of sale, to be obtained of Messrs. Marbury, Stewart & Co., Solicitors, 57 Coleman Street; of C. J. Hayter, Esq., at the Office of the London Financial Association, 1 Draper's Gardens, Throgmorton Avenue, E.C.; at the Wood Green Entrance Lodge; at Messrs. Furber, Price & Furber's Office at the Palace; and at the Auction and Estate Offices, Warwick Court, Gray's Inn, W.C.

Lewisham, Kent, a short distance from Catford Bridge Station on the Mid-Kent Line, and about a mile from the Junction Station.—A valuable Freehold Residential and Building Estate, containing about 13 acres, with extensive frontages to the High Road. With Possession.

**MESSRS. TOPLIS & HARDING** are instructed by the Executors of the late E. M. Hubback, Esq., to **SELL BY AUCTION**, at the Mart, E.C., on Wednesday, January 14, at Two punctually, in Three Lots, a valuable **FREEHOLD RESIDENTIAL AND BUILDING ESTATE**, situated on the High Road, Lewisham, and known as "Rosenthal." It comprises a comfortable old-fashioned Family Residence, in excellent repair throughout (a large sum having been recently expended in repairs and decorations), containing seven bedchambers, dressing-room, fitted bath-room, entrance hall, handsome drawing-room, large dining-room, lofty billiard-room, double morning-room, leading into a conservatory, and ample domestic accommodation; a capital detached stabling, comprising four loose boxes, coach and chaise houses, harness-room, men's rooms, &c.; finely-terminated pleasure grounds, with large tennis lawn, greenhouses, vineery, forcing ground, and ornamental water, well-stocked kitchen and fruit garden, small farmery, and in the rear several enclosures of meadow land, and two cottages in George Lane, the whole having a frontage to the high road of about 570 feet, and containing about 10 acres immediately available for building operations. On the other side of the high road is a plot of freehold building land of about two acres, with wide frontage thereto and to a side road.—The property may be viewed by cards only (to be had of the Auctioneers), and particulars had of Messrs. Stones, Morris & Stone, Solicitors, 5 Finsbury Circus; at the Mart; and of Messrs. Toplis & Harding, 16 St. Paul's Churchyard, E.C.

UPPER THAMES STREET, E.C.—To Builders, Marble Masons, and Others.—Absolute Sale of Marble Chimney-pieces, &c. (in consequence of the Premises having to be given up at Lady Day).

**MESSRS. HORNE, SON & EVERSFIELD** are instructed by Mr. George Mitchell to **SELL BY AUCTION**, on the Premises, No. 168 Upper Thames Street, E.C., on Tuesday, January 20, and following days, at Twelve punctually, on each day, the whole of the valuable **STOCK** of very handsome **CHIMNEYPIECES** and **FENDERS** in Statuary, Sicilian, Blanc, P. Sienna, Brun Breche, Italian Grotto, Bardilla, Black, Rouge Royal, St. Ann's, &c., and other Marbles, in every variety of design suitable for building of every class of house; a large selection of kitchen ranges and tile grates by the best makers; and a well-assorted stock of 3-inch and 1-inch tiles, &c.—May be viewed one week prior to Sale, and catalogues had on the Premises; also at No. 168 Brompton Road, S.W.; and of Messrs. Horne, Son, & Eversfield, 17 Great George Street, S.W., and 80 Fore Street, E.C.

To Builders and Others.—Hendon.—Valuable Freehold Land with buildings thereon, comprising two cottages, barn, and stable, producing, when all are let, £38 4s. per annum, less some small outgoings. Well situated in the above valuable locality, in main road at the corner of Collin Deep Lane, the Burroughs, and near station.

**INMAN & CO.** will **OFFER BY AUCTION**, at the Mart, Tokenhouse Yard, E.C., on Monday, January 19, at One o'clock, the above valuable **PROPERTY**, on the usual conditions of sale at the Mart; of Messrs. Smith, Stanning & Croft, Solicitors, 70A Aldermanbury; and at the Auction Offices, 126 Maiden Lane.

**BERMONDSEY WALL POTTERIES**, fitted with Kilns, Plant, and Machinery, with possession, together with the Goodwill of the old-established Business for the Manufacture of Stoneware Drainpipes, Chimney-pots, &c.

**MESSRS. FULLER, HORSEY, SONS & CASSELL**, are instructed by the Executors of the late Mr. Henry Millicham to **SELL BY AUCTION**, at the Mart, Tokenhouse Yard, London, E.C., on Wednesday, January 21, 1885, at One precisely, in One Lot, the valuable **PREMISES**, known as the **Bermundsey Wall Potteries**, situate No. 98 Bermundsey Wall, occupying an area of about 21,500 square feet, part freehold and part leasehold. The freehold portion has a frontage to Salisbury Street, and comprises a substantial brick-built factory of three floors, with kiln, covered store adjoining, and large yard. The remainder of the premises consists of a spacious factory, with two kilns, and two pairs edge-runners, steam-engine and boiler-house, with horizontal steam-engine and boiler, chimney-shaft, stabling, dwelling-house, and yard, held for an unexpired term of about forty-one years, at a rental of £210 per annum; also a factory adjoining, with two kilns and dwelling-house, held for an unexpired term of about two years, at a rental of £40 per annum.—May be viewed by orders, to be obtained at the Auctioneers' Offices, and particulars had of A. Calkin Lewis, Esq., Solicitor, 7 Fumival's Inn, E.C.; Samuel Dyer, Esq., Esq., Chartered Accountant, 3 King Street, Chesham, E.C.; at the Mart; and of Messrs. Fuller, Horsey, Sons, & Cassell, No. 11 Billiter Square, E.C.

On Friday next.

**CITY ROAD**.—By order of Mr. G. Tatum, the Mortgagee, at a low reserve.—Valuable Freehold Building Site.

**MESSRS. BAKER & SONS** will **SELL BY AUCTION**, at the Mart, Tokenhouse Yard, Bank, E.C., on Friday next, Jan. 16, 1885, at One o'clock precisely, under previously sold privately, in One Lot, a grand **FREEHOLD BUILDING SITE**, most eligibly situate on the south side of the City Road, immediately opposite St. Luke's Vestry-hall and the Eagle Tavern. It was formerly known as Nos. 228, 229, 230, 231, 234, and 236 City Road, with a frontage thereto of 98 feet, an average depth of 150 feet, and occupying an area of about 10,000 feet super. Vacant freehold land in this important and crowded neighbourhood rarely comes into the market; this site, therefore, offers an excellent opportunity to the capitalist, builder, or speculator, for the erection of shops, warehouses, or artisans' dwellings, or, in fact, for any building purposes which require a commanding position in a busy thoroughfare.—Particulars, plan, and conditions of sale may be had at the Mart; of Messrs. Alfred Jones & Co., Solicitors, 33 John Street, Bedford Row, W.C.; and of the Auctioneers, 11 Queen Victoria Street, E.C.

Leytonstone, close to the Station on the Great Eastern Railway.

**MR. GEORGE B. SMALLPEICE** has received instructions to **SELL BY AUCTION**, at the Mart, Tokenhouse Yard, Bank of England, on Thursday, January 23, at Two punctually, **FOUR ELEGANT PLOTS OF FREEHOLD BUILDING LAND**, situate in the Fairlop, Fillebrook, and Bulwer Roads, with frontage amounting to 550 feet. Also the Freehold Residence in Fairlop Road, known as Albany Villa. The land is exceedingly well placed, within 20 minutes' ride of the Metropolis, to which a constant and regular service of trains; it is well adapted for the erection of villas of a superior description, and which, from their easy access, would readily command a desirable class of tenants. The residence may be viewed with the permission of the occupier.—Particulars may be obtained of C. B. Cooper, Esq., Solicitor, 40 Bedford Row, W.C.; at the Mart; and of George B. Smallpeice, Surveyor and Auctioneer, 9 and 10 Tokenhouse Yard, Lotbury, E.C.

City of London, Paternoster Row.—A valuable Freehold Building Site of about 1,770 square feet.

**MR. ROBERT REID** will **LET BY AUCTION**, at the Mart, on Friday, January 23, at Two precisely, on building lease for a term of 80 years, a valuable **FREEHOLD BUILDING SITE**, being No. 7 Paternoster Row, and on the north side thereof, seven doors from St. Paul's Churchyard, occupying an area of about 1,770 square feet, with a frontage of 22 feet to Paternoster Row, in the heart of the publishing trade, and for many years occupied by the delegates of the University Press, Oxford. Particulars, with plan, may be obtained of Messrs. Woolleys, Beardsley & Bosworth, Solicitors, Loughborough; at the Mart, E.C.; and of Mr. Robert Reid, 51 Great Marlborough Street, W.

In the High Court of Justice, Chancery Division: "Bowling v. Dubois."—Hendon and Kilburn.

**MR. ROBERT REID** will **SELL**, at the Mart, on Friday, January 23, at Two precisely, in Two Lots, Plot of **FREEHOLD BUILDING LAND**, having a frontage of 40 feet and a depth of 120 feet in Daw's Lane Mill Hill, Hendon, five minutes' walk from Mill Hill Station, on the Midland Railway; and a Leasehold House, No. 5 Lincoln Terrace, Willesden Lane, Kilburn. Held by lease for 75 years unexpired, at a rental of £10 per annum.—Particulars may be obtained of Messrs. Cree & Son, solicitors, No. 13 Gray's Inn Square, W.C.; also of Messrs. Dubois, Reid, & Williams, solicitors, No. 3, Pancras Lane, E.C.; at the Mart, E.C.; and of Mr. Robert Reid, 51 Great Marlborough Street, W.

Holloway.—Small Leasehold Investment.

**MESSRS. FRANK LEWIS & CO.** will **SELL BY AUCTION**, at the Mart, on Friday, January 16, at Two precisely, in Two Lots, the valuable long Leasehold Property, known as No. 94 Narrow Street, Limehouse, upon which are two dwelling-houses and offices, with covered barge-building premises and wharf in rear, all erected by the present lessees, with frontage on the Thames of 36 feet, and may be adapted for a ground-rent of £47 per annum, and of the rental value of £42 per annum.—Particulars may be had of Messrs. Rye and Eyre, solicitors, 16 Golden Square, W.; and of the Auctioneers, 95 Gresham Street, E.C.

By Order of Mortgagees.—Waterside Premises, Limehouse.—Long Leasehold Barge-Builder's Premises, and valuable Piece of Freehold Land.

**MESSRS. FRANK LEWIS & CO.** will **SELL BY AUCTION**, at the Mart, on Friday, Jan. 16, at Two precisely, in Two Lots, the valuable long Leasehold Property, known as No. 94 Narrow Street, Limehouse, upon which are two dwelling-houses and offices, with covered barge-building premises and wharf in rear, all erected by the present lessees, with frontage on the Thames of 36 feet, and may be adapted for a ground-rent of £47 per annum, and of the rental value of £42 per annum. Also a valuable piece of Freehold Land, with the buildings thereon, consisting of sail loft, stores, and smithy, situated on the north side of Ropemakers' Fields, Limehouse, having a frontage of about 50 feet by a depth of about 136 feet, adapted for the erection of warehouses or dwellings.—Particulars, with plan, may be had at the Mart; of Messrs. Smith, Stanning & Croft, solicitors, 70A Aldermanbury, E.C.; of F. S. Stanning, Esq., solicitor, Maidstone; and of the Auctioneers, 95 Gresham Street, E.C.

Preliminary Announcement.—To Speculators, Charitable or Religious Institutions, and others seeking extensive Premises and Buildings, with large Concert Hall, Lecture Room, or Ball Room, &c., within easy distance of the metropolis.

**MESSRS. WM. & F. HOUGHTON** are favoured with instructions to **SELL BY AUCTION**, at an early date (unless an acceptable offer be made in the meantime), the valuable **FREEHOLD PROPERTY** known as the **Athenaeum, Oakleigh Park**, near the populous and important town of Barnet, Herts, situate about five minutes' walk from Oakleigh Park Station, on the main line of the Great Northern Railway, and seven minutes from the Totteridge and Whetstone Station on the High Barnet branch. It consists of a lofty and well-constructed hall, 60 feet by 30 feet, capable of seating over 400 people, with patent sliding stage. Connected with the stage and hall are retiring-rooms with lavatory, kitchen, reception-rooms, and other conveniences. The approach is by a carriage sweep beneath a porte cochère, opening to entrance hall and lobby. The floor having been expressly laid for dancing renders the hall specially suitable as a ball-room, the hall being licensed for music and dancing. In connection with the before-named is a well-lighted billiard-room, library, lavatory, and a four-roomed cottage for caretaker. There are extensive and level tennis lawns in the well-shrubbed grounds which surround the buildings. The latter, together with the billiard-room and library, could readily be let off as a club.—Full particulars, with plans, of Messrs. Houghtons & Byfield, Solicitors, 88 Finchchurch Street, E.C., and of Messrs. Wm. & F. Houghton, 61 Old Broad Street, London, E.C.

Sales for the Year 1885.

**MESSRS. DEBENHAM, TEWSON, FARMER & BRIDGEWATER** beg to announce that their **SALES OF LAND AND ESTATE, INVESTMENTS, Town, Suburban, and Country Houses, Business Premises, Building Land, Ground Rents, Advowsons, Reversions, Stocks, Shares, and other Properties**, will be held at the Auction Mart, Tokenhouse Yard, near the Bank of England, in the City of London, as follows:—

|                      |                      |
|----------------------|----------------------|
| Tuesday, January 20  | Tuesday, June 9      |
| Tuesday, February 3  | Tuesday, June 16     |
| Tuesday, February 17 | Tuesday, June 23     |
| Tuesday, February 21 | Tuesday, June 30     |
| Tuesday, March 3     | Tuesday, July 7      |
| Tuesday, March 10    | Tuesday, July 14     |
| Tuesday, March 17    | Tuesday, July 21     |
| Tuesday, March 24    | Tuesday, July 28     |
| Tuesday, March 31    | Tuesday, August 4    |
| Tuesday, April 7     | Tuesday, August 11   |
| Tuesday, April 14    | Tuesday, August 18   |
| Tuesday, April 21    | Tuesday, August 25   |
| Tuesday, April 28    | Tuesday, October 6   |
| Tuesday, May 5       | Tuesday, October 20  |
| Tuesday, May 12      | Tuesday, November 10 |
| Tuesday, May 19      | Tuesday, November 24 |
| Tuesday, June 2      | Tuesday, December 15 |

Auctions can also be held on other days. In any case due notice should be given, in order to insure proper publicity. The period between such notice and the auction must, of course, considerably depend upon the nature of the property intended to be sold.—86 Chesham, London.

BEXHILL-ON-SEA.

Between St. Leonards and Eastbourne, with Railway Station on the Estate.

**MESSRS. E. & H. LUMLEY** beg to announce that the extensive improvement works which have been carried on at a cost of about £50,000 are now complete, and invite the attention of builders, contractors, and capitalists to the valuable sea frontage now ripe for buildings. Leases will be granted on easy terms, and every facility afforded for developing this very promising seaside town.

Plans and particulars may be obtained of Lumleys, agents to the freeholder, the Right Hon. Earl DE LA WARR, at 21 St. James's Street, Piccadilly, S.W.

VAUXHALL.

On the Albert Embankment, in close proximity to the river. A Freehold Building Site of about 12,500 square feet, with extensive frontages to the road and pathway of the Embankment, close to Messrs. Doulton's Potteries and other large factories, and well adapted for the erection of a warehouse, Public Hall, or business premises requiring space and a prominent and commanding position unequalled in the district.

**MESSRS. FAREBROTHER, ELLIS, CLARK & Co.** are instructed to offer for **SALE BY AUCTION**, at the Mart, Tokenhouse Yard, E.C., on Thursday, February 12, 1885, at 2 o'clock, the above valuable **FREEHOLD BUILDING SITE**.

For particulars apply to H. E. Brown, Esq., Solicitor, 23 Great George Street, Westminster, S.W.; or to Messrs. Farebrother, Ellis, Clark & Co., 23 Fleet Street, and 18 Old Broad Street, E.C.

MILE END, E.

**MR. BRADSHAW BROWN** will **SELL BY PUBLIC AUCTION**, on the premises, on Wednesday, January 21, 1885, at 11 for 12 o'clock, the valuable Lease of a complete Terra Cotta Works in Maplin Street, Mile End Road, E.C., comprising the premises, with three chimneys, two kilns, and kilns, shaping, mixing, modelling, and drying rooms, with shelves, offices, cart-house, 3 stall stable, good yard, and vacant land, comprising an area of about 17,000 feet.

The premises are suitable for almost any business requiring large ground space. Held on Lease for 20 years unexpired term of 25 years from Michaelmas 1884 at £70 per annum.

Particulars and conditions of sale may be obtained of Henry J. Jennings, Esq., Solicitor, 53 Lincoln's Inn Fields, W.C., or at the Auctioneers' Offices, 59 Fenchurch Street, E.C., and Millwall, E.

Result of Sale at Lewisham.—First Portion of the Priory Estate.

**MR. RICHARD J. COLLIER** has the pleasure to announce that, in addition to the 51 Lots of **FREEHOLD BUILDING LAND**, included in his Auction Sale, at the Plough Tavern, High Street, Lewisham, on Monday Evening, 27 additional Plots, forming a further portion of the Estate, were at the request of the company present, submitted to public competition, the whole, with the exception of four small plots (with-  
drawn for the present) being **SOLD**. Mr. Collier also begs to announce that since the auction 25 additional plots have been sold by private treaty; also that a further portion of the estate will be offered for sale by auction early in February next, full announcements of which will be duly given.—Offices, 28 Finsbury Pavement, E.C.

City of London, Paternoster Row.  
A valuable Freehold Building Site of about 1,770 square feet.

**MR. ROBERT REID** will **LET BY AUCTION**, at the Mart, on Friday, January 23, at Two o'clock precisely, on building lease for a term of 80 years, a valuable **FREEHOLD BUILDING SITE**, being No. 7 Paternoster Row, and on the north side thereof, seven doors from St. Paul's Churchyard, occupying an area of about 1,770 square feet, with a frontage of 22 feet to Paternoster Row, in the heart of the publishing trade, and for many years occupied by the delegates of the University Press, Oxford. Particulars, with plan, may be obtained of Messrs. Woolleys, Beardsley & Bosworth, Solicitors, Loughborough; at the Mart, E.C.; and of Mr. Robert Reid, 51 Great Marlborough Street, W.



**PENDLETON.**—Jan. 12.—For Construction of Railway from Pendleton to Hindley (13 miles 9 chains); Connecting Line at Agecroft (38 chains); and Connecting Line at Westhoughton (1 mile 30 chains). The Engineer, Hunt's Bank, Manchester.

**RAINFORD.**—Jan. 17.—For Supplying 100 tons of Second Setts, 5 or 6 inches wide by 7 or 8 inches deep. Mr. B. Smith, Clerk to the Local Board, Rainford.

**RAMSGATE.**—Jan. 23.—For Enlarging Post Office. Mr. A. B. Mitford, Secretary H.M. Office of Works, 12 Whitehall Place, S.W.

**RAMSGATE.**—For Machine-made Stourbridge Oval Retorts (650 feet). Mr. W. A. Valon, Engineer to the Ramsgate Corporation Gas Department.

**ROCHDALE.**—For Supply of Steam-Engines for Mill. The Secretary, Crawford Spinning Company, Rochdale.

**ROSSCABBERRY.**—Jan. 17.—For Construction of Works for Water Supply to Town. Mr. W. H. Spiller, Clerk to the Union, Clonakilty.

**RUMWORTH.**—Jan. 19.—For Construction of Pipe Sewers at Deane and other parts of Townships of Rumworth and Heaton. Mr. Atherton, Engineer, 24 Mawdsley Street, Bolton.

**SALTLEY.**—Jan. 20.—For Execution of Works in Gate Street and Brick-paving Footpaths. Mr. Digby Jenkins, Surveyor to the Local Board, Park Road, Saltley.

**SOUTHAMPTON.**—Jan. 13.—For Improvement Works, Mordaunt Road. Mr. W. B. G. Bennett, Borough Surveyor, Southampton.

**SOUTHPORT.**—Jan. 15.—For Supply of 50 Cast-iron Manhole Covers, &c. Mr. W. Crabtree, Borough Surveyor, Southport.

**STOCKWELL.**—Jan. 15.—For Building Coal Store, Forming Drain and other Works, at the South-Western Fever Hospital. Mr. Matthew Wyatt, Architect, 77 Great Russell Street, Bloomsbury Square, W.C.

**STREATHAM.**—Jan. 13.—For Cleaning Out Pond, and Works in connection. Board of Works, Spring Gardens, S.W.

**ST. HELENS.**—Jan. 21.—For Building Engine Shed, Coke Stage, and Thirty-three Dwelling-houses. Mr. William Bell, Architect Railway Offices, Northgate, Darlington.

**ST. MARYLEBONE.**—Jan. 13.—For Works and Materials for one year—viz., Supply of Thames Ballast, Sand, Cement, Lime, &c. Ironwork for Sewers, Glazed Stoneware, Sewage Pipes, &c., &c. Mr. W. E. Greenwell, Vestry Clerk, Court House, St. Marylebone.

**ST. MARYLEBONE.**—Jan. 15.—For Supply for the year of Broken Stone, Footway Kerb, and Yorkshire and other Footway Paving. Mr. W. E. Greenwell, Vestry Clerk, Court House, St. Marylebone.

**SWANSEA.**—Jan. 31.—For Alterations and Additions at Herbert's Lodge, Bishopston. Mr. Henry Hall, Architect, 19 Doughty Street, Mecklenburgh Square, London.

**THRAPSTON.**—Jan. 23.—For Supplying and Fixing Double-barrel Pump, Cast-iron Tank, Pipes, Hydrants, &c. Mr. H. Smith, Engineer, Basingstoke.

**WALLSEND-ON-TYNE.**—Jan. 12.—For Building School-rooms, &c., and Enlarging the Biddle Schools. Mr. T. Southron, Architect, 70 King Street, South Shields.

**WANSTEAD.**—Jan. 12.—For Construction of 500 feet run of 12-inch Pipe Sewer, with Manhole, Ventilators, and Junctions. Also for Construction of 460 feet run of 12-inch surface Water Drain. Mr. William Blewitt, Clerk, Local Board Offices, Wanstead, E.

**WANSTEAD.**—Jan. 12.—For Construction of 364 feet run of 9-inch Drain, and 300 feet of 12-inch Pipe Sewer, with Manholes and Ventilators, also Laying 260 feet run of 12-inch surface Water Drain. Mr. William Blewitt, Clerk, Local Board Offices, Wanstead, E.

**WAREHAM.**—Jan. 12.—For Building Chancel and Organ Chamber and Reseating Church of St. Mary, East Stoke. Messrs. John Colson & Son, Architects, 45 Jewry Street, Winchester.

**WELLINGTON.**—Jan. 24.—For Supply of Cast-iron Socket Pipes (200 tons). Mr. E. Pritchard,

C.E., 2 Storey's Gate, Westminster, or 37 Waterloo Street, Birmingham.

**WESTMINSTER.**—Jan. 21.—For Supplying Cornish Boiler, 20 feet by 6 feet. Mr. H. Wilkins, Clerk to the Commissioners of Public Baths, 16 Marshall Street, Golden Square.

**WHITBY.**—Jan. 15.—For Alterations and Additions to No. 15 Wellclose Square and Club House adjoining. Mr. Edward H. Smales, Architect, Brunswick Street, Whitby.

**WIGAN.**—Jan. 20.—For Building Block of Shops in Wallgate. Messrs. Tritt & Verity, Architects, Wallgate, Wigan.

## TENDERS.

### ASHFORD.

For the Construction of New Roads, Footpaths, Sewers, Gullies, Manholes, &c., on the Farbrace Estate, Ashford, Kent, for the Kent and Sussex Freehold Land Society, Limited. Mr. W. R. KING, Architect to the Society, 22 Bank Street, Ashford.

|                                    |      |   |   |
|------------------------------------|------|---|---|
| Hughes, Ashford . . .              | £815 | 0 | 0 |
| Bingham, Headcorn . . .            | 797  | 0 | 0 |
| Beadle Bros, Erith . . .           | 774  | 0 | 0 |
| Beale, Maidstone . . .             | 750  | 0 | 0 |
| CONLEY, Maidstone (accepted) . . . | 693  | 0 | 0 |
| Trueman, London . . .              | 649  | 0 | 0 |
| Surveyor's Estimate . . .          | 740  | 0 | 0 |

### BIRMINGHAM.

For Building Inn, Bromsgrove Street, Birmingham.

|                                   |        |   |   |
|-----------------------------------|--------|---|---|
| Thompson . . .                    | £3,287 | 0 | 0 |
| Surman & Son . . .                | 3,197  | 0 | 0 |
| Briley . . .                      | 3,190  | 0 | 0 |
| Taylor . . .                      | 3,125  | 0 | 0 |
| Bradney & Co. . .                 | 3,065  | 0 | 0 |
| Parker . . .                      | 2,995  | 0 | 0 |
| Rowbotham . . .                   | 2,979  | 0 | 0 |
| Sapcote & Son . . .               | 2,913  | 0 | 0 |
| Barker & Son . . .                | 2,860  | 0 | 0 |
| Bowen . . .                       | 2,775  | 0 | 0 |
| WOODWARD & SMITH (accepted) . . . | 2,700  | 0 | 0 |

## CONTRACTS.

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THE Name of the Celebrated Qualities of HONE STONE produced from the Water of Ayr Stone Quarry and Hone Works, and esteemed and known in the market as "Water of Ayr Stone," "Snake Stone," and "Scotch Hone," and exclusively supplied by me and my predecessors for about one hundred years past, is now changed to the distinctive name "Tam o' Shanter" Hone or Stone, and some of the grades of quality suited for special purposes will be known as "Dalmore Hone," "Montgomeriestone Hone," and "Soutar Johnny Hone."

Every Stone will bear a Label or Stamp with one or other of these Names, and the Public are earnestly requested to ask for it accordingly, as only the very inferior sorts, and those hitherto rejected at my Quarry, will now be sent out by me as "Water of Ayr Stone" or "Snake Stone."

JOHN G. MONTGOMERIE.  
Water of Ayr Stone Quarry & Hone Works.  
Dalmore, Stair, Ayrshire; July 1884.

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The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"Sir,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it. Yours, &c.

"To Mr. Grundy." "JAMES WEIR, F.R.I.B.A.

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

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For Building Mill and Warehouse, Vulcan Street, Bradford. Messrs. MILNES & FRANCE, Architects.

Baistow, Shipley, mason.  
Binns, Bradford, joiner.

E. & W. H. Haley, Bradford, ironfounder.  
Hodgson & Son, Bradford, plumber.  
Howroyd & Son, Bradford, plasterer.  
Hill & Nelson, Bradford, slater.  
Swift & Co., Bradford, painter.

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For Improvements to Public Baths, Brighton.  
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For Additions to Offices, Bromley.  
Arnaud. . . . . £18 5 0

**CANTERBURY.**

For Building Cellars, Malt Store, &c., and Removal of existing Buildings at the Dane John Brewery, Canterbury, for Messrs. Ash & Co. Messrs. H. STOPES & Co., Architects and Surveyors.

|                               |        |   |   |
|-------------------------------|--------|---|---|
| Austin & Lewis, Dover         | £2,969 | 0 | 0 |
| Parker & Crow, Canterbury     | 2,637  | 0 | 0 |
| Gaskin, Canterbury            | 2,634  | 0 | 0 |
| Amos & Foad, Whitstable.      | 2,620  | 6 | 0 |
| Greenwood, Mansfield          | 2,560  | 0 | 0 |
| Wise, Deal                    | 2,463  | 0 | 0 |
| Shrubsole, Faversham          | 2,448  | 0 | 0 |
| Adcock, Dover                 | 2,442  | 0 | 0 |
| Dunn & Son, Deal              | 2,330  | 0 | 0 |
| Wills, Dover                  | 2,330  | 0 | 0 |
| W. & T. Denne, Walmer         | 2,295  | 0 | 0 |
| Hayward & Paramor, Folkestone | 2,261  | 0 | 0 |
| Stiff, Dover                  | 2,187  | 0 | 0 |
| BROOKS, Folkestone (accepted) | 2,100  | 0 | 0 |

**COLCHESTER.**

For Additions to Sunnymeade House, Colchester.

|                     |      |   |   |
|---------------------|------|---|---|
| Chambers            | £299 | 0 | 0 |
| Malster             | 290  | 0 | 0 |
| Eade                | 230  | 0 | 0 |
| Dupont              | 215  | 0 | 0 |
| OLDRIDGE (accepted) | 212  | 0 | 0 |

**DELPH.**

For Building Infants' School, &c., Delph, Saddleworth. Mr. ALEXANDER BANKS, Architect, Oldham.

LEES, Oldham (accepted).  
Twenty-two tenders were received.

**DENHOLME.**

For Extensions to White Shaw, Denholme. Messrs. MILNES & FRANCE, Architects, 99 Swan Arcade, Bradford.

*Accepted Tenders.*

Booth & Sons, Clayton, mason.  
Deacon, Shipley, joiner.  
Nunwick & Co., Bradford, plumber.  
Dixon, Bradford, plasterer.  
Nelson, Bradford, slater.

**EDINBURGH.**

For Building Police Station, Causewayside, Edinburgh.  
WATSON & SON (accepted) . £3,463 0 0

**FARNHAM.**

For Rebuilding the Plough Inn, Farnham. Mr. SIDNEY STAPLEY, Architect, Farnham, Surrey.

|                    |      |   |   |
|--------------------|------|---|---|
| Tompsett & Kingham | £922 | 0 | 0 |
| Diamond            | 610  | 0 | 0 |
| Parrot             | 608  | 0 | 0 |
| Garland            | 548  | 0 | 0 |
| Patrick            | 510  | 0 | 0 |
| Hughes             | 493  | 0 | 0 |

**IPSWICH.**

For Building Shops and Warehouses in Princes Street, Ipswich, for Messrs. Grimwade & Ridley. Mr. W. EADE, F.R.I.B.A., Architect. Quantities by Mr. Arthur Field.

|                                     |        |    |   |
|-------------------------------------|--------|----|---|
| Brass & Co., London                 | £5,526 | 0  | 0 |
| Kenny, Ipswich                      | 3,672  | 0  | 0 |
| J. B. & F. Bennett, Ipswich         | 3,525  | 0  | 0 |
| Coe, Ipswich                        | 3,475  | 10 | 0 |
| Borrett, Ipswich                    | 3,400  | 0  | 0 |
| GRIMWOOD & SONS, Sudbury (accepted) | 3,080  | 0  | 0 |

**ISLEWORTH.**

For the Erection of Laundry at the Union Workhouse, Isleworth, W., for the Brentford Board of Guardians. Mr. EDWD. MONSON, jun., A.R.I.B.A., Architect, Grosvenor House, The Vale, Acton, W. Quantities by the Architect.

|   |        |   |   |
|---|--------|---|---|
| Hiscock, Hounslow                       | £1,700 | 0 | 0 |
| Barnes, Brentford                       | 1,535  | 0 | 0 |
| Bloomer, Brentford End                  | 1,498  | 0 | 0 |
| Addis, Hanworth                         | 1,450  | 0 | 0 |
| Tozer, Notting Hill                     | 1,384  | 0 | 0 |
| Haynes, Alperton                        | 1,350  | 0 | 0 |
| Knight, West Kensington                 | 1,329  | 0 | 0 |
| Rowles, Acton                           | 1,295  | 0 | 0 |
| Carless & Co., Richmond                 | 1,276  | 0 | 0 |
| Beach, Kilburn                          | 1,250  | 0 | 0 |
| Maton, Kew                              | 1,243  | 0 | 0 |
| Baxter, Upton                           | 1,229  | 0 | 0 |
| Hann & Co., Windsor                     | 1,189  | 0 | 0 |
| SCHARIEN & WILLIAMS, Chelsea (accepted) | 1,179  | 0 | 0 |

**LEICESTER.**

For Building Congregational Church, Stoneysgate, Leicester. Mr. TAIT, Architect, Leicester.

|                  |        |    |   |
|------------------|--------|----|---|
| Clarke & Garrett | £5,270 | 0  | 0 |
| Hutchinson       | 5,250  | 0  | 0 |
| Hewitt           | 5,050  | 0  | 0 |
| Bland & Sons     | 5,020  | 0  | 0 |
| Holmes           | 4,860  | 11 | 2 |
| T. & H. Herbert  | 4,824  | 0  | 0 |
| Jewsbury         | 4,807  | 0  | 0 |
| MAJOR (accepted) | 4,604  | 0  | 0 |

For Erection of Coal Shed at Belgrave, for the Leicester Local Board.

SHILCOCK & SON (accepted) . £14 10 0

For Supply of Materials during the Year 1885, for the Corporation of Leicester. Mr. J. GORDON, C.E., Borough Surveyor, Town Hall, Leicester.

*Accepted Tenders.**Iron, &c.*

|                                      |      |   |   |
|--------------------------------------|------|---|---|
| Jukes, Coulson, Stokes & Co., London | £291 | 4 | 8 |
|--------------------------------------|------|---|---|

*Timber, &c.*

|                 |     |   |   |
|-----------------|-----|---|---|
| Beal, Leicester | 282 | 5 | 9 |
|-----------------|-----|---|---|

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|   |      |      |
|---|------|------|
| For Glazed Screen to the sides of the Corridors of the General Hospital, for the Guardians of Leigh Union. Messrs. BANKS, FAIRCLOUGH, & STEPHEN, Architects, Leigh. |      |      |
| Williams, Leigh   | £203 | 15 0 |
| Larmuth & Sidebotham, Salford   | 175  | 11 6 |
| Eyet  | 149  | 15 0 |
| Wright, Leigh   | 149  | 0 0  |
| HORROCKS, Leigh (accepted)  | 140  | 0 0  |

## LINCOLN.

|  |        |     |
|--|--------|-----|
| For Rebuilding Premises in Broadgate and Magpies Square, Lincoln, belonging to Mr. E. B. Green, Grocer, High Street. Mr. W. MORTIMER, Architect. |        |     |
| Martin & Sims, Lincoln   | £1,799 | 0 0 |
| Baines, Newark   | 1,790  | 0 0 |
| Greenwood, Mansfield   | 1,710  | 0 0 |
| Hatchliffe, Billingham   | 1,688  | 0 0 |
| Otter & Broughton, Lincoln   | 1,620  | 0 0 |
| Crosby & Sons, Lincoln   | 1,579  | 0 0 |
| Greenham, Branston   | 1,540  | 0 0 |
| Binns Bros., Lincoln   | 1,525  | 0 0 |
| Harrison & Sands, Lincoln  | 1,523  | 0 0 |
| H. S. & W. Close, Lincoln  | 1,489  | 0 0 |
| Wright, Lincoln  | 1,487  | 0 0 |
| Horton Bros., Lincoln  | 1,483  | 0 0 |
| Harrison, Lincoln  | 1,482  | 0 0 |
| Cowen & Lansdown, Lincoln  | 1,330  | 0 0 |
| HARRISON, Lincoln (accepted)   | 1,295  | 0 0 |

For [Science and Art Schools, for the Building Committee, exclusive of Fittings, Lincoln. Mr. GEORGE LEDGER, Architect, Parliament Mansions, Westminster, S.W. Quantities by Messrs. H. & F. Stone.

|                                      |        |     |
|--------------------------------------|--------|-----|
| Neill & Sons, Manchester             | £7,615 | 0 0 |
| S. & W. Pattison, Ruskington         | 7,535  | 0 0 |
| Martin & Sims, Lincoln               | 7,252  | 0 0 |
| Morgan, Lincoln                      | 6,900  | 0 0 |
| Baines, Newark                       | 6,850  | 0 0 |
| Otter & Broughton, Lincoln           | 6,780  | 0 0 |
| J. & T. Binns, Lincoln               | 6,750  | 0 0 |
| Greenwood, Mansfield                 | 6,580  | 0 0 |
| H. S. & W. Close, Lincoln            | 6,448  | 0 0 |
| Crosby & Sons, Lincoln               | 6,264  | 0 0 |
| Wright, Lincoln                      | 6,089  | 0 0 |
| COWEN & LANSDOWN, Lincoln (accepted) | 5,930  | 0 0 |

## LEWES.

|  |    |      |
|--|----|------|
| For Supplying of Wadsworth's patent Balancing and Tipping Cart to carry 1½ tons, for the Lewes Corporation. Mr. ARTHUR HOLT, Borough Surveyor. |    |      |
| Parsons  | 25 | 15 0 |
| Cheale & Son   | 24 | 10 0 |
| Allchin & Linnell  | 24 | 5 0  |
| Lowdell & Co.  | 24 | 0 0  |
| EVERY (accepted)   | 23 | 17 6 |

All of Lewes.

## LONDON.

|   |        |      |
|---|--------|------|
| For Alterations, &c., at St. Andrew Street, Holborn, for the Liverpool Victoria Legal Friendly Society. Mr. F. G. SMITH, Architect. Quantities by Mr. Walter Barnett. |        |      |
| SHURMUR (accepted)  | £3,978 | 0 0  |
| For Roads and Sewers on portion of Southborough Park Estate.  |        |      |
| Chafen  | £2,000 | 0 0  |
| Kavanagh  | 1,965  | 0 0  |
| Hampton   | 1,910  | 0 0  |
| Peller  | 1,893  | 0 0  |
| R. & G. Neal  | 1,883  | 0 0  |
| Rigby   | 1,690  | 0 0  |
| Nichols   | 1,651  | 11 6 |
| Nowell & Co.  | 1,621  | 0 0  |
| Hare  | 1,577  | 0 0  |
| Mayo  | 1,574  | 14 6 |
| Felton  | 1,567  | 0 0  |
| Ball  | 1,100  | 0 0  |

For Road and Sewer on Southborough Park Estate.

|                  |        |      |
|------------------|--------|------|
| Searce & Son     | £5,277 | 0 0  |
| Nowell & Robson  | 4,196  | 0 0  |
| Chafen           | 4,000  | 0 0  |
| Jarvis           | 3,895  | 0 0  |
| Pellen           | 3,830  | 0 0  |
| Bath & Blackmore | 3,800  | 0 0  |
| R. & G. Neal     | 3,786  | 0 0  |
| J. Neal          | 3,700  | 0 0  |
| Mayo             | 3,692  | 0 0  |
| Kavanagh         | 3,598  | 0 0  |
| Felton           | 3,585  | 0 0  |
| Rigby            | 3,550  | 0 0  |
| Hare             | 3,550  | 0 0  |
| Nichols          | 3,525  | 18 0 |
| Ball             | 3,400  | 0 0  |

## LONDON—continued.

|  |        |     |
|--|--------|-----|
| For Alterations to the Ivy House, &c., Hoxton, for Messrs. B. & G. Hyams. Mr. EDWARD BROWN, Architect, Hanbury Street, Spitalfields. |        |     |
| Kiddle & Son   | £2,325 | 0 0 |
| Salt   | 2,175  | 0 0 |
| Anley  | 1,960  | 0 0 |
| Marr   | 1,945  | 0 0 |
| Shurmur  | 1,944  | 0 0 |
| Hawkins  | 1,897  | 0 0 |
| Jackson & Todd   | 1,797  | 0 0 |

|  |      |     |
|--|------|-----|
| For Clearing Site and Works in Wiple Place, Kensington, for the Vestry of St. Mary Abbots. Mr. W. M. WEAVER, Surveyor. |      |     |
| Bottom Bros.   | £963 | 0 0 |
| Cooke & Co.  | 920  | 0 0 |
| Julian   | 885  | 0 0 |
| Rogers & Dickens   | 815  | 0 0 |
| Felton   | 797  | 0 0 |
| Mears  | 794  | 0 0 |
| HOWELL & ROBSON*   | 760  | 0 0 |
| Bull & Ward  | 300  | 0 0 |

\* Accepted subject to confirmation of Vestry, 14th inst.

|  |      |     |
|--|------|-----|
| For Alterations and New Bar at the Prince Albert Public-house, St. Martin's Lane, Charing Cross, W.C., for Mr. J. Iles. Mr. J. W. BROOKER, Architect, 13 Railway Approach, London Bridge, S.E. |      |     |
| W. & F. Croaker  | £230 | 0 0 |
| Garratt  | 220  | 0 0 |
| Beale  | 220  | 0 0 |
| BATTLEY (accepted)   | 210  | 0 0 |

|                                    |    |      |
|------------------------------------|----|------|
| New Under-counter and Penetrating. |    |      |
| Heath                              | 65 | 0 0  |
| Warne                              | 62 | 12 0 |
| SANDERS & SON (accepted)           | 56 | 0 0  |

For Heating No. 13 Upper Merrion Street, Dublin.

|  |  |  |
|--|--|--|
| BACON & Co., London (accepted)                         |  |  |
| For Heating St. Charles's Orphanage, Brentwood, Essex. |  |  |
| BACON & Co, London (accepted)                          |  |  |

For Heating King and Queen's College of Physicians, Dublin.  
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|  | Greystone, Blue Lias, and Chalk Lime. | Broseley and Yorkshire Roofing Tiles. | Hair, Sand, &c. &c.         |

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CANAL BRIDGE WHARFS, OLD KENT ROAD, S.E.  
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BLACK HORSE LANE, RICHMOND.

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**LONDON—continued.**

For the Metropolitan Free Hospital, Kingsland Road. Mr. H. H. COLLINS & Mr. EDMESTON, Joint Architects. Quantities by Messrs. Hovenden, Heath & Berridge.  
SHURMUR (accepted) . . . £20,574 0 0  
For full list see *The Architect* of December 20.

**OLDHAM.**

For Erection of Retort House, Cannel Shed, and Chimney at the Hollinwood Station, for the Oldham Corporation Gas Committee.  
C. SCHOFIELD & Co., Oldham (accepted).

**PORTSMOUTH.**

For Forming Road between Napier and Saxe-Weimar Roads, Portsmouth, for Mr Morris Welch. Mr. A. E. J. GUY, Surveyor, Portsmouth.

|                           |          |
|---------------------------|----------|
| Lewis . . . . .           | £711 0 0 |
| Biggs . . . . .           | 529 0 0  |
| Quick . . . . .           | 521 0 0  |
| Crockerell . . . . .      | 520 0 0  |
| Ward . . . . .            | 492 0 0  |
| Hayter . . . . .          | 481 0 0  |
| HALL (accepted) . . . . . | 475 0 0  |

**SHEFFIELD.**

For Building Dwelling-house, Gleadless, near Sheffield, for Mrs. Maria Gosling. Mr. JOHN CLARK, Architect. Quantities by the Architect.

|   |          |
|---|----------|
| Marsden, Chapelton . . . . .              | £421 0 0 |
| Smith, Sheffield . . . . .                | 407 14 0 |
| Donnellan, Sheffield . . . . .            | 404 9 4  |
| Booker, Sheffield . . . . .               | 404 0 0  |
| Hollingsworth, Sheffield . . . . .        | 394 0 0  |
| Wright, Sheffield . . . . .               | 391 0 0  |
| Rodley & Sons, Sheffield . . . . .        | 379 15 0 |
| Harrison, Sheffield . . . . .             | 377 0 0  |
| Nicholson, Sheffield . . . . .            | 376 0 0  |
| Fearn & Savage, Sheffield . . . . .       | 370 0 0  |
| Wilkinson & Sons, Heeley . . . . .        | 355 0 0  |
| Carson, Sheffield . . . . .               | 343 4 6  |
| Fletcher, Sheffield . . . . .             | 339 0 0  |
| PINDER BROS., Intake (accepted) . . . . . | 335 0 0  |

**SITTINGBOURNE.**

For Building Coal Store and other Works, at the Water Works, Keycol Hill, Sittingbourne. Mr. WILLIAM LEONARD GRANT, Architect.

|                                  |          |
|----------------------------------|----------|
| Bishop . . . . .                 | £210 0 0 |
| Chittenden, Knight & Co. . . . . | 189 6 6  |
| Chrisfield . . . . .             | 180 0 0  |
| Tidy . . . . .                   | 165 14 6 |
| Pavey . . . . .                  | 159 10 0 |
| Seager . . . . .                 | 149 18 6 |
| BEAUMONT (accepted) . . . . .    | 138 0 0  |

**TENTERDEN.**

For Repairs to Town Hall Lavatory, Tenterden.  
Warrington . . . . . £22 0 0  
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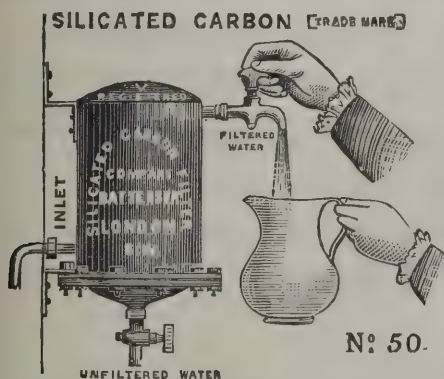
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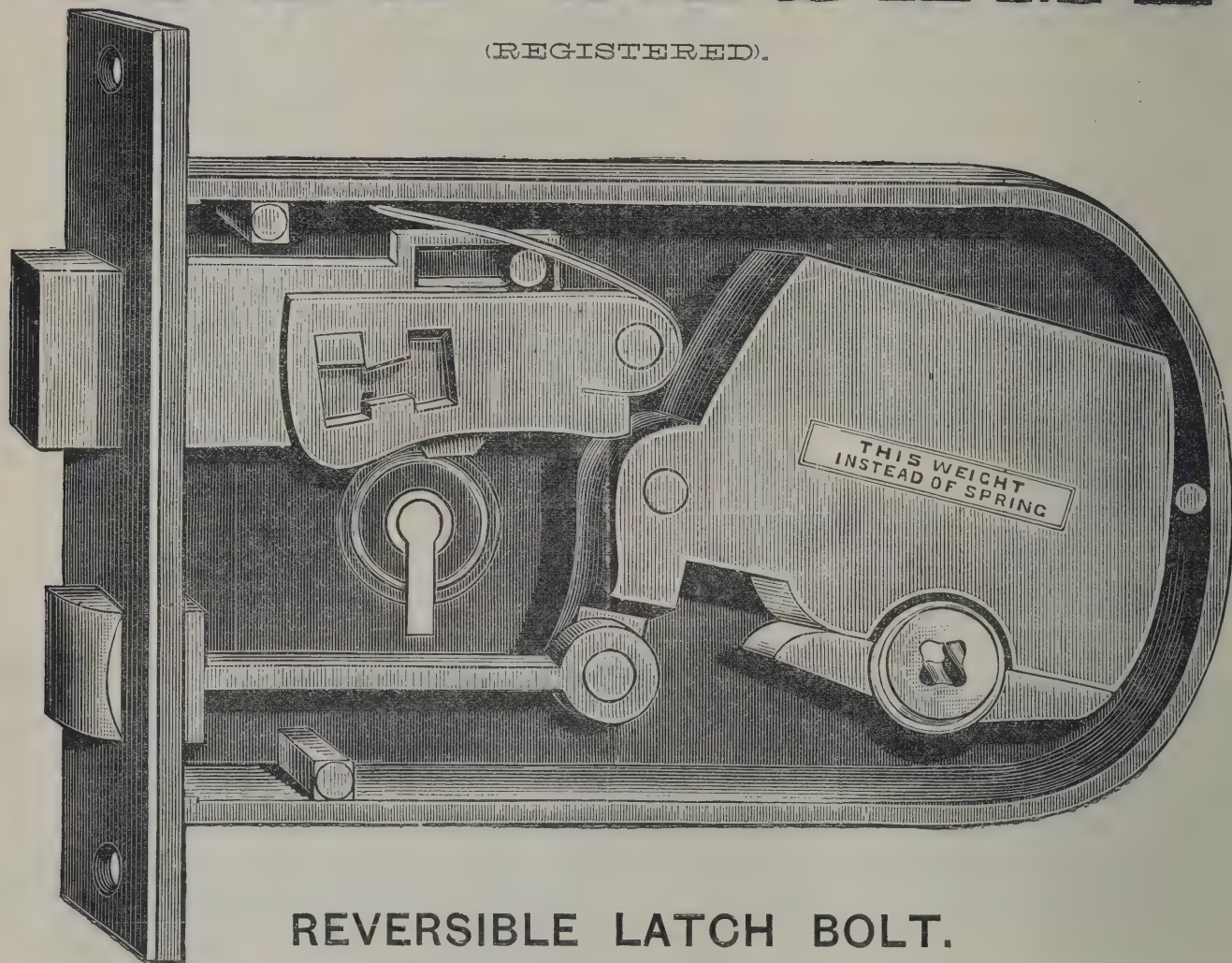


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# The Architect.

## THE WEEK.

THE death of Mr. JOHN WHICHCORD will cause surprise to many of his friends. He was sixty-one years of age, but his appearance and manner were those of a man in the full vigour of life. Indeed he seemed to be more like a constant frequenter of the hunting-field or a yachtsman than an architect whose work mainly lay in London. Mr. WHICHCORD was a witness that was invaluable in arbitration and valuation cases, and he acted frequently as assessor. This experience gave him a rather authoritative manner, which sometimes made strangers believe that he was arrogant, but no man could be more disposed to consider objections which might be made to his pet theories or be more open to conviction. The longer he was known the better he was liked for his manliness, and Mr. ALMA TADEMA expressed the experience of a good many when he said that Mr. WHICHCORD came to him as a subject for a portrait, but before the painting was finished he had made a friend of him. There were objections raised to his appointment as President of the Institute of Architects, which made the office unenviable, but he discharged all the duties as he did his daily work, that is, zealously and with credit to himself. Mr. WHICHCORD was a type of the "City architect," and as such might almost be considered to take the place of Sir WILLIAM TITE. His business, therefore, was not confined to the designing of buildings, and comprised the variety of work which arises when they are considered as property and investments. Mr. WHICHCORD made his acquaintance with construction as a science at a very early age, and although he wrote archaeological essays the world's verdict was that he was better qualified to deal with modern building work. Among the large works which he carried out were the Grand Hotel at Brighton and the St. Stephen's Club; but his chief building is probably the fine block belonging to the Safe Deposit Company, where his practical skill found congenial exercise in devising a building into which thieves could not enter.

THE attendance at the funeral of Mr. WHICHCORD, which took place at Kensal Green Cemetery on Thursday, was a testimony of the esteem in which he was held by the profession. There were deputations from the Royal Institute of British Architects, the Institute of Surveyors, the Institution of Civil Engineers, the District Surveyors' Association, and the Jerusalem Masonic Lodge. Amongst those present were Sir JOHN MONCKTON and Sir CHARLES HUTTON GREGORY, C.E., K.C.M.G., Messrs. E. R. ROBSON, J. MACVICAR ANDERSON, W. H. WHITE, THOMAS CHATFIELD CLARKE, OCTAVIUS HANSARD, ALFRED CONDER, J. TAVENOR PERRY, HENRY CURREY, EWAN CHRISTIAN, JOSEPH CLARKE, ARTHUR CATES, Professor HAYTER LEWIS, BENJAMIN TABBERER, JOHN CLARKSON, BANISTER FLETCHER, ROBERT WALKER, WILLIAM CUNNINGHAM GLEN, C. L. EASTLAKE, and COLE ADAMS.

It is evidently considered to be an advantage to belong to the Surveyors' Institution. There are for this year's examinations upwards of one hundred candidates. The Students' Entrance Examination will be held on the 20th and 21st inst., and fifty-five of the candidates are entered for it; the remainder are for the professional examinations in April next for land agents, valuers, and building surveyors. By the provisions of the charter, candidates for the Professional Associateship can now enter by examination only. The compulsory examination for the Fellowship does not come into force for several years to come, but a considerable number of candidates who have already passed the Professional Associate's Examination have offered themselves for the voluntary examination for this class.

LAST summer an exhibition of crown jewels was held in the Louvre, in order to obtain funds for the metal-workers' art schools. It has been lately discovered that one of the ornaments contains false stones, and suspicions have been

excited. It is known that the jewels have been reset from time to time to suit changes of fashion, and, owing to the skill with which imitations are produced, it might not be impossible to deceive the guardians who had charge of the treasures. But in the case that is now talked about in Paris there are no grounds for complaint. In 1861 there was a fancy ball in the Tuileries, and the Empress decided to appear as a Venetian lady of the highest rank. The costume allows of the use of a large quantity of jewels, and as those belonging to the State were insufficient in number imitations were used. The principal charm was the collar of pear-shaped pearls, united by a network of gold, which is one of the most magnificent ornaments in existence. The strictest investigation has shown that there are no grounds for supposing that false stones have been foisted into the collections during the late empire.

THE energy which is shown by engineers in seizing everything that pertains to construction, is exemplified by one passage in Sir FREDERICK BRAMWELL'S address. In referring to silos, it was said that the credit for the introduction of those stores could not be claimed by the civil engineer. Nevertheless, he is rapidly turning his attention to the improvement of the details. This is characteristic. The engineer is also getting hold of farm-buildings, and it will not be his fault if he does not secure the building of the farmers' residences—that is, supposing the English farmer does not become extinct through foreign competition.

It was lately supposed that the Porte Saint-Denis in Paris, which BLONDEL designed, could not be restored, and that its demolition was inevitable. As a record of the victories of LOUIS XIV. it may not be pleasing to Republican eyes, and it is no longer surrounded by the picturesque crowd of customs' agents, peasants, and travellers which may be seen in old views of Paris. The Commission of Historic Monuments appeared to think that removal was the best course; but within the last few days it has been resolved to make another attempt to restore the gate. If the consent of the Municipality can be obtained, the passage through it will be stopped and the gate will be enclosed with hoarding. Then the work will begin. It is difficult to know what to do with the sculpture. Through some mysterious reason the figures have not been able to resist the atmosphere of Paris, although it contains so little that is deleterious to stone, and it seems absurd to re-create GIRARDON'S allegories, which have lost all interest.

THE exhibition of carpentry and joinery which was held at the Carpenters' Hall last summer, is to be followed by a course of free lectures on subjects connected with building addressed to artisans and others engaged in the building trades. The co-operation of gentlemen well qualified to instruct and interest an audience has been secured. The lectures, which are to be given on Wednesday evenings in February and March, at the hall in London Wall, will be eight in number. The lecturers will be Professor KERR, of King's College; Professor CHURCH, of the Royal Academy; Professors BONNEY, CORFIELD, KENNEDY, and ROGER SMITH, of University College, and Messrs. BLASHILL and SLATER. There can be no doubt that these lectures will be found valuable by students of architecture, as well as by those to whom they are immediately addressed. Such students will be welcomed, if they attend.

THE King of BAVARIA is alone among monarchs in taking a personal interest in art, and His Majesty has undergone great expense in order that his architects may be able to give reality to their ideas of ancient buildings. WAGNER'S "Walkure" allowed an opportunity to construct an ancient German house such as HUNDING was likely to inhabit. It was erected in the Parc de Linderhof. The King, who loves to be secluded from the ordinary life of a court, and to allow his poetic imagination to revel in visions of the past, is accustomed to spend a part of every winter at Linderhof. There at least he can fancy that he is a Paladin of the Wittlesbach. As HUNDING'S dwelling was a favourite resort, the servants were anxious that it should be comfortably warm, and by some accident the fur with which it was hung caught fire and the structure was destroyed.



## TENURES OF BUILDING SITES.

WHEN ADAM SMITH was writing his "Wealth of Nations" he was struck by the fact that house rent was dearer in London than elsewhere, while furnished apartments were cheaper than on the Continent. He came to the unexpected conclusion that the dearness of the houses was the cause of the cheapness of the lodgings. Every landlord in London acted the part of a monopolist, and demanded a higher rent for a single acre of bad land than could be had for a hundred of the best in the country; and from a peculiar custom, which obliged every master of a family to hire a whole house from top to bottom, that rent was paid. The tradesman was therefore obliged, said SMITH, to use the ground floor for his shop, the garrets for bedrooms, and, to obtain a part of his rent, he let the two middle storeys to lodgers. The London tradesman expected to maintain his family by his trade, and not by his lodgings, "whereas at Paris and Edinburgh the people who let lodgings have commonly no other means of subsistence, and the price of the lodging must pay not only the rent of the house, but the whole expense of the family."

In this statement we can see a few of the anomalies and difficulties which still surround the tenure of houses in London; but since SMITH wrote they have been multiplied in number. An acre of land in the City is worth more than a hundred acres in the country. Shops are consequently dearer, and the upper parts of a house have to be turned to a more profitable use than for living and bedrooms. The struggle to keep a house is therefore in London more exhausting than in the last century. Men in those days were not so disposed as they are now to ask troublesome questions, and their exertions to meet the exactions of the monopolist landlords were taken as a matter of course. But when some people began to investigate the conditions of the globe in ages before man appeared on its surface, it is not surprising that others less venturesome should be attracted by primitive institutions, and that it should be asked what was the origin of that property in land, of which the London landlord exemplifies the most advanced development? The inquiry has produced very curious information from time to time, and a late addition is found in the collection of "reports which have been prepared by Her Majesty's representatives abroad on the system of tenure of dwelling-houses in the countries in which they reside." We have in them official statements, without a syllable of exaggeration, on the laws and customs relating to building sites in twenty-two European kingdoms.

What is apparent at the first glance is that the English system of letting sites on terminable leases has found little favour abroad. In Austria, such agreements are unknown. In Bavaria, land can be sold or let on the condition that the purchaser shall build houses, but we are told that land is never let and very seldom sold on such a condition, since, as a general rule, no necessity exists for it. Ownership is so general that the floors in the workman's dwellings in Munich have separate proprietors. Belgium is a country in which many things relating to buying and selling have been derived from England, and there is some approach to the English system. But in Holland, which has been less affected by foreign influences, and has a greater esteem for stability, a purchaser obtains an absolute or freehold right in the site. There is even nothing resembling the copyhold tenure of England. The French have had so many changes in the course of a century it is not surprising that great latitude is allowed in transactions relating to the disposal of land. But it is remarkable that upon the expiration of a lease the tenant is recouped for his outlay on the buildings. We are informed that "the calculation is based on the principle that the lessee should not only obtain an annual income varying from 4 to 6 per cent. of the capital expended, but that the money laid out on the buildings should be redeemed." This is a great advantage over the English custom. The Germans look favourably on the creation of large estates. Yet it appears that a special covenant would be needed to create the ordinary English tenure, and such a contract between parties is unknown in Prussia and Germany in general.

Italy is too young as a kingdom to have systematised all the customs of her various states, but freeholds find more favour than leaseholds. Even in Rome, where speculation

abounds in respect of buildings, tenants can redeem the rent by paying an amount of money that is equivalent to twenty years' purchase. The tenures of Spanish property are not to be explained in a sentence; but dwelling-houses are mostly freehold, and long building leases are unknown in Spain. If the system ever existed in Portugal, it has fallen into disuse. Turning eastward, we find that in Servia no houses are built except on freehold ground, and a building lease is not recognised by the law. Roumania has copied France, and has a Société de Construction in Bucharest. The sites for the new buildings which are let out in flats, as if they were in Paris, have, however, to be purchased as freeholds; ground-rents are unknown in the rural districts. It is not flattering to us to find a resemblance to the English lease in Turkey. There are five classes of landed property, and four kinds of freeholds. A small lot can be sold outright as a site, but it is sometimes let for a term at an annual rent, on the condition that the houses are to become the property of the landlord at the end of the term. Property which is known as endowed, or "vakouf," cannot be sold, and whatever is built on it belongs to the administration without any compensation being given to the builder.

From the extent of the Russian empire there must be variety in the customs, and it is not surprising that authorities differ about them. The Secretary to the Embassy says that the system of letting land on long building leases does not prevail in Russia; whereas a lawyer, who was consulted, states that the leases do exist, and that it is usual to stipulate that at the end of the term the houses shall become the landlord's property. In Poland the Code Napoléon rules. The Poles live generally on their own land, which is sure to be mortgaged, and houses in towns are freehold. It is possible, however, to make a building lease like the English, but it is uncommon. In the Baltic provinces the law is said to be based on Roman law, and in agreements, it is usual to stipulate that the lessee is to have liberty to remove his buildings if he cannot agree for their sale. By the law in Finland, the lessee can be compelled to remove his houses or to sell them to the landlord at a valuation.

Under the Swedish arrangements freeholds are usual, but building leases of fifty years are often adopted wherever villas are to be erected, as in the neighbourhood of towns and bathing-places. Unless there is a stipulation to the contrary it is prescribed by the law that the lessee retains the right to remove buildings of every description, while other improvements go to the landlord. In Norway, a perpetual annual rent is recognised as well as freehold. But when a lease is entered into for a specified number of years the tenant remains owner of the house, which he is able to remove. In Wurtemberg it is difficult to obtain a lease, inasmuch as a house built on land is considered part of the general estate, and in the event of a sale by the landlord the tenant would have to retire, although he might take an action for breach of contract. Lastly, the conditions in Switzerland may be described. The Swiss are independent, and the English tenures are almost incomprehensible to them. Absolute ownership is the sole condition of property among that fine race of people.

It will be seen from the foregoing information that fixity of tenure is more prevalent in other countries than in England. Why there should be so remarkable a difference between the Continent and Great Britain is a question which has been often discussed. The theory with us is that no man can have more than an estate in his land, and that the ultimate property of all lands lies in the Crown. In practice it is otherwise, and it is possible for a man to do many things with his property which will bring about "the waste of the king's strength, which lies in his people." It is not, however, our province to consider the economic and political aspects of the question. But we may again call attention to the effect of the English tenure of leaseholds upon architecture. That expensive buildings have been erected upon ground which is held for a limited number of years is certain. The stipulations in the leases insure that so much money has to be laid out as well as paid in, and the competition between rivals will not admit in many cases of indifference to business premises. But we maintain that the general effect of the system is to create a class of buildings of which the endurance is limited, and speculative builders can adapt houses to suit all terms. What upholds the



system is the belief that life is full of ups and downs, and that permanence in any condition is not to be desired. The old-fashioned tradesmen did look forward to a perpetuation of their names in one business and in one place, but the modern idea is to "sink the shop." It is also believed that a fortune is to be made in a limited period, if at all, and hence in a place like Birmingham the Corporation are able to secure tenants for their new streets, although the leases are for short terms and the other conditions are rigorous. It is not, however, entirely wise to encourage an indifference to permanence. The Americans are examples of what it leads to, and of its effects. Fortunately there are signs that in England inhabitiveness is likely to meet with more recognition, and the reports we have noticed will have their influence towards the attainment of that end.

### "THE HISTORY OF ART."—II.\*

THE composition of M. EHRMANN'S frieze, of which the remaining part is published this week, is expressive of the history of art. History is sometimes compared to a procession, and sometimes to the course of a river, but unhappily in the case of art it is a procession with many interruptions, a river with many diversions. KANT could propose an universal history on a cosmo-political plan, in which a series of propositions were established, one leading to another with all the exactitude of EUCLID. But among them there are none which will give an answer to the question why the progress of art should not have been continuous? As M. EHRMANN shows us, the chain was broken when Rome invaded Greece, and art became the slave of the conquerors. Time, which mends so many things, for once failed. There were noble works produced for Roman patricians, but all the wealth of the empire could not give endurance to schools which grew to maturity in Greek villages. At length the barbarians arrived, and then there was a long night for art. The various groups which combine to form M. EHRMANN'S painting may seem to be disconnected, but if they are it is because they are true to what is known of the history of art. The principle which the artists recognised in working is the same, for Greeks, Chinese, Egyptians, Italians, all have professed to have had a common standard in nature; while the conditions have been so local as to appear to separate rather than to unite the men.

The very first figures that are seen in the plate which is given this week are suggestive of new conditions. If they are compared with the Greek artists that approach ATHENÉ this will be more evident. The artists of the Parthenon are inspired with a faith that is almost childlike; they have no misgivings about the necessity or the profit of what they are doing, and the Greek poet is almost as joyous as the dancers. Life in those days corresponds with the fine lines of Lord HOUGHTON:—

Great thoughts, great feelings, came to them  
Like instincts, unawares;  
Blending their souls' sublimest needs  
With tasks of every day,  
They went about their gravest deeds  
As noble boys at play.

The Renaissance artists, DA VINCI and MICHEL ANGELO, look much less happy than the Greek men, and in so painting them M. EHRMANN suggests the spirit which inspires art from the Revival. As for RAPHAEL, he was too fortunate and died too early to have known much sadness of spirit. The older artists did not weary themselves with subjective miseries, but were grateful for living in a beautiful world, containing capital models and delightful legends, which seemed to have been invented for the purpose of suggesting subjects. A Greek DA VINCI or MICHEL ANGELO would have been an impossibility. If they had lived in Athens one would not have spent a long life over a few works, and the other would not have been dissatisfied with his figures when the first excitement was over, or be filled with despair at the end of a long life. DA VINCI is here shown as the seer gazing with prophetic eye on things which have yet to be realised. Or have we the indignant

painter rebuking Prior BANDELLI, that good easy man who believed that pictures like *The Last Supper* could be produced at the rate of so many square yards per day?

How should he know the artist's inward strain,  
His vexing and fastidious discontent?  
Art he considers as a sort of trade  
Like laying bricks: if one can lay a yard  
In one good hour, how can it be so hard  
In two good hours that two yards should be laid?  
But, Signor Duca, you can apprehend  
The artist's soul—how there is ne'er an end  
Of climbing fancies, longings and desires,  
That burn within him like consuming fires;  
How, beaten to and fro by joy and pain  
He grasps at shadows he can ne'er retain.  
How sweet and fair the inward vision gleams!  
How dull and base the painted copy seems!  
We are like Danaos' daughters—all in vain  
We strive to fill our vases. Human art  
Through myriad leaks lets out the spirit's part,  
And nothing but the empty dregs remain.

That is how Mr. STORY, the sculptor, imagines what DA VINCI must have thought and spoke in the Dominican refectory, and the painter may have stood on some such occasion exactly as M. EHRMANN has represented him.

The MICHEL ANGELO of the frieze is suggestive of extreme sadness, and it is remarkable that no painter or sculptor has ventured to create a figure that would allow us to believe that the great artist ever was in a happy mood. We can suppose that in his old days, when he wrote the "Crocifisso" sonnet, MICHEL ANGELO was humble in spirit, as every line testifies:—

The pride of art, the sculptured thought,  
Vain idols that my hand hath wrought.  
To place my trust in such were naught  
But sheer insanity.

In M. EHRMANN'S picture we may take him as an embodiment of that unrest and despondency which is characteristic of art and literature. RAPHAEL, as he walks in glory and in joy, has a little that is Greek about him, but care has hold on most of the remaining painters,

It is not surprising that in the frieze, as in the "Hemicycle," a prominent place should be given to NICHOLAS POUSSIN, for, as the head of the French school, he is entitled to the reverence of Frenchmen. With reason he has been described "le peintre de la raison et des gens d'esprit," and M. EHRMANN suggests the Classicism or severity of his style by making him carry a picture under his arm like the Greek artist. Indeed, the Academicians in 1667 did compare the figures in his painting of the *Fall of Manna* with the best Greek statues, and some of his paintings have been described as ancient bas-reliefs which have been animated by POUSSIN'S pencil. In disposition he had a good deal of the antique philosopher, and, like many painters, he was not without occasions when his temper was sorely tried by patrons and officials. REYNOLDS was not an admirer of POUSSIN, whom he considered to be too simple in his arrangements, but he calls him a learned painter. But his learning was not exactly of the same kind as BENJAMIN WEST'S, who managed to paint classical subjects with the aid of a book or two. POUSSIN was the founder of the modern archæological school of painting, although he was too little of the pedant to obtrude details. In his old age he spent much time among ruins in Rome. VIGNUEL DE MARVILLE says he often met him with his handkerchief full of stones, moss, or flowers, in order to copy them exactly. "One day I asked him how he had attained to such a degree of perfection as to have gained so high a rank among the great painters of Italy. He answered, 'I have neglected nothing.'"

From POUSSIN with his "Ego in Arcadia vixi" and reminiscences of classic legend, to the Chinese artificers, there is a wide jump; and yet the freewill offerings to venerable idols are accompanied with a heartiness that compares with that of the Greek worshippers. The Easterns give of their best—silks, pottery, metal work, and joinery. Why, with the power of attaining so much beauty in those things, the Chinese did not go further, and represent the human figure properly, is a question which can hardly fail to be raised in the spectator's mind. Is it owing to the precautions by which the human figure was encased in gar-

\* See Illustration.



ments which were not always beautiful in form? Bishop VIDA in his poem tells us that the goddess VENUS, finding that her rivals had monopolised linen and wool for robes, visited China, and that, in the interest of decorum, a robe of the richest silk was presented to her. The incident indicates the difference between Greece and China, and the art of Western Europe sometimes takes one country and sometimes the other for a guide. The lover in "Locksley Hall" prefers fifty years of Europe to a cycle of Cathay. But Chinese conservatism has one advantage, for it enables M. EHLMANN to put its representatives very close to the ancient Egyptians without any appearance of incongruity. The early history of Egypt has yet to be revealed; but it has been supposed by some speculators that there is a relationship between it and that of China—at least enough to warrant the order seen in the frieze.

### MODERN ENGINEERING.

ON Tuesday Sir Frederick J. Bramwell delivered his presidential address at the Institution of Civil Engineers. In the course of it he said:—Principles are generally very soon determined, and progress ensues, not by additions to the principles, but by improvement in the methods of giving to those principles a practical shape, or by combining in one structure principles of construction which had been hitherto used apart. So far as novelty in the principle of girder-construction is concerned, I must confine myself to that combination of principles which is represented by the suspended cantilever, of which the Forth Bridge, only now in course of construction, affords the most notable instance. It is difficult to see how a rigid bridge, with 1,700 feet spans, and with the necessity for so much clear headway below, could have been constructed without the application of this principle. The St. Louis Bridge of Mr. Eads may, I think, be fairly said to embody a principle of construction novel since 1862—that of employing for the arch-ribs tubes composed of steel staves hooped together. In suspension-bridges there has been introduced that which I think is fairly entitled to rank among principles of construction, the light upper chain, from which are suspended the linked truss-rods, doing the actual work of supporting the load, the rods being maintained in straight lines, and without the flexure at the joints due to their weight. In the East River Bridge, New York, there was also introduced that which I believe was a novelty in the mode of applying the wire cables. These were not made as untwisted cables and then hoisted into place, thereby imposing severe strains upon many of the wires composing the cable, through their flexure over the saddles and elsewhere, but the individual wires were led over from side to side, each one having the length appropriate to its position, and all, therefore, when the bridge was erected, having the same initial strain and the same fair play. The employment of testing machines has come into the daily practice of the engineer. In lieu of such machines being used by the few, and at rare intervals upon small specimens, for experimental purposes, they are now employed in daily practice and on a large scale.

In harbour work we have had the principle of construction employed by Mr. Stoney at Dublin, where cement masonry is moulded into the form of the wall for its whole height and thickness. By a very carefully thought-out apparatus blocks are raised off the seats whereon they have been made, and are transported to their destination. It is no simple undertaking, even in these days, to raise otherwise than hydraulically a weight of 350 tons, which is the weight of the blocks with which Mr. Stoney deals.

A noteworthy instance of the use of pneumatic appliances in cylinder-sinking for foundations is that in progress at the Forth Bridge. The wrought-iron cylinders are 70 feet in diameter at the cutting edge, and have a taper of about 1 in 46. At their bottoms there is a roofed chamber, into which the air is pumped, and in which the men work when excavating, this roof being supported by ample main and cross-lattice girders. At the Tay Bridge, also now in course of construction, the cylinders are sunk while being guided through wrought-iron pontoons, which are floated to their berths and are then secured at the desired spot by the protrusion, hydraulically, of four legs, which bear upon the bottom, and thus, until they are withdrawn, convert the pontoon from a floating into a fixed structure.

There are, happily, cases of subaqueous tunnelling where the water can be dealt with by ordinary pumping power, more or less extensive, and where the material is capable of being cut by a tunnelling machine. This was so in the Mersey Tunnel, and would be in the Channel Tunnel. In the Mersey Tunnel, and in the experimental work of the Channel Tunnel, Colonel Beaumont and Major English's tunnelling machine

has done most admirable work. In the 7-foot 4-inch diameter heading in the new red sandstone of the Mersey Tunnel a speed of as much as 10 yards forwards in twenty-four hours has been averaged, while a maximum of  $11\frac{1}{2}$  yards has been attained; while in the 7-foot heading for the Channel Tunnel, in the gray chalk, a maximum speed of as much as 24 yards forwards in the twenty-four hours has been attained on the English side, and with the later machine put to work at the French end a maximum speed of as much as  $27\frac{1}{2}$  yards forwards in the twenty-four hours has been effected. In ordinary land tunnelling since 1862 there has been great progress by the substitution of dynamite and preparations of a similar nature for gunpowder, and by the improvements in the rock-drills worked by compressed air, which are used in making the holes into which the explosive is charged. For boring for water, and for many other purposes, the diamond drill has proved of great service, and most certainly its advent should be welcomed by the geologist, as it has enabled specimens of the stratum passed through to be taken in the natural unbroken condition, exhibiting not only the material and the very structure of the rock, but the direction and the angle of the dip of the bed.

Probably few materials have been found more generally useful to the civil engineer in works which are not of metal than has been Portland cement. During the last twenty-two years great improvements have been made in the grinding and in the quality of the cement. The artificial material, brick, cannot in these days be said to surpass in quality the bricks used by the Romans in this island 1,900 years ago, but as regards the mode of manufacture and the materials employed, there is progress to be noted. The brick-making machine and the Hoffmann kiln have economised labour and fuel, while attempts have been made, which I trust may prove successful, for utilising the clay which is to be found in the form of slate in those enormous mounds of waste which disfigure the landscape in the neighbourhood of slate quarries. Certain artificial stones, moreover, appear at last to be made with a uniformity and a power of endurance, and in respect of these qualities compare favourably with the best natural stone, and still more favourably having regard to the fact that they can be made of the desired dimensions and shape, thus being ready for use without labour of preparation.

Of timber in new countries the engineer is commonly glad to avail himself to an extent which among us is unknown. Owing to the ready adaptability of metals to the use of the engineer the employment of wood is decreasing. Many attempts have been made to render timber proof against the two great defects of rapid decay and of ready combustibility. The Asbestos Paint is used to coat the wooden structures of the Inventions Exhibition. To the employment of this it is not too much to say those buildings owed their escape in last year's very dry summer from being consumed by a fire that broke out in an exhibitor's stand, destroying every object on that stand, but, happily, not setting the painted woodwork on fire, although it was charred below the surface. A surface application may not enable wood to resist the effects of a continued exposure to fire, but it does appear that it can prevent its ready ignition.

Many improvements have been made in the transmission of power from one part of a machine to another. For long distances we have the development of hydraulic transmission, pipes being now laid down for supplying water under the 700 lb. on the square inch pressure; we have companies authorised, if not at work, for laying down pipes to distribute compressed air; we have now, by reason of the improvement in gas engines, the ability to lay on power in every town illuminated by gas, which practically means every town and large village; and we have in New York and in some other cities of the United States high-pressure steam, conveyed in mains below the streets, to be used both for power and for heating, for which second purpose, however, it should be remembered the contents of a gas main are equally available. There is the rope system at Schaffhausen, and we may take it as clearly established that we are, day by day, becoming more alive to the benefit, where little power is required, or where considerable power is required but only intermittently, of deriving that power from a central source.

Except in the magnitude of the work and the excellence of the design, of which the new Liverpool waterworks now in progress may well stand as a typical example, there is not much to say as regards progress in those waterworks which are dependent upon storage. In the United States and Canada the waste of water that takes place not only causes the mains to be incapable of keeping up the pressure under the excessive draught, but renders sources of supply insufficient which otherwise would be ample for years to come. Progress has been made here in the matter of house-fittings, by which waste has been greatly checked and the risk of contamination that formerly existed with certain closet-fittings is ended. This question of house-fittings has always been a difficult one and cannot be grappled with by water authorities such as those in the United States and in Canada, *i.e.* municipal authorities afraid of offending the voter. We owe it, however, to Mr.



Deacon, the engineer of an English municipal water authority, that it is now possible to deal with the correction of household fittings at a minimum of cost and, what is equally important, with a minimum of annoyance to the householder. By the employment of the waste-water meter, situated under the flag-stones of the footway and controlling a group of houses, it is possible to find out the total waste in the whole of those houses and on the mains supplying them; then to localise that waste so as to attribute its true proportion to the houses that are the offenders, and to attribute the proportion, if any, to the pipes of the suppliers of water. Having ascertained these facts, not only can the suppliers of water cure the defects in their pipe system, but they are enabled to cure the household waste, not by the expensive and annoying process of an inspection of the fittings throughout the whole district, involving the annoyance of, say, ninety householders whose fittings are in perfect order to detect the ten householders whose fittings are in a reprehensible condition, but by the mere visitation of these ten who are in default, and who cannot, therefore, complain of the visitation. In most of our towns the supply is satisfactory; but in spite of the alarm raised by the suggestion of double mains, we might do well in many cases where there is a pure but limited supply to have a dual system of mains, and thus to distribute the pure water separately and for potable purposes. The Parisians, at least, have recognised the expediency of thus sorting their supply when that supply is of varying quality, and when the best of it is limited in quantity.

In cases where there appears to be no thoroughly satisfactory source of water, the experience of the efficacy of iron purification, as practised at Antwerp, does hold out very considerable promise. Gas likewise has been alluded to under the heads of motors and of transmission of power and of heat; but I now desire to say a few words in connection with it under its more ordinary aspect—that of a distributed illuminant. In 1862 the price of ordinary coal-gas in London was from 4s. to 5s. per thousand cubic feet; the illuminating power was such that five cubic feet of the gas burnt in a specified burner in one hour should give a light equal to twelve sperm candles, each burning 120 grains in the hour. Now 16-candle gas is sold in London for as little as 2s. 10d. per thousand cubic feet. The regenerative gas-burners and other modes of burning promise to largely increase (it is said even to more than double) the candle-power per cubic foot of gas burnt. The decrease in cost and the increase in profits are largely due to the application of chemistry to this manufacture, by which application the former nuisance-creating by-products have been turned into sources of revenue and into fertilisers for our fields. Valuable improvements in gas-furnaces have enabled coal-gas to be applied to the melting of even very refractory metals by means of a most inexpensive plant.

## PROFESSIONAL CHARGES IN AMERICA.

THE following is the revised schedule of charges and professional practice of architects adopted by the American Institute of Architects at the last convention:—

### General Provisions.

For full professional services (including supervision) five per cent. upon the cost of the work. In case of the abandonment of the work, the charge for partial service is as follows:—

|  |             |
|--|-------------|
| Preliminary studies . . . . .  | 1 per cent. |
| Preliminary studies, general drawings and specifications . . . . .           | 2½ "        |
| Preliminary studies, general drawings, specifications, and details . . . . . | 3½ "        |

For works that cost less than 10,000 dols., or for monumental and decorative work, and designs for furniture, a special rate in excess of the above.

For alterations and additions, an additional charge to be made for surveys and measurements. An additional charge to be made for alterations or additions in contracts or plans, which will be valued in proportion to the additional time and services employed.

Necessary travelling expenses to be paid by the client.

Time spent by the architect in visiting for professional consultation, and in the accompanying travel, whether by day or night, will be charged for, whether or not any commission, either for office work or supervising work, is given.

The architect's payments are successively due as his work is completed, in the order of the above classifications.

Until an actual estimate is received, the charges are based upon the proposed cost of the works, and the payments are received as instalments of the entire fee, which is based upon the actual cost.

The architect bases his professional charge upon the entire cost, to the owner, of the building when completed, including all the fixtures necessary to render it fit for occupation, and is

entitled to additional compensation for furniture or other articles designed or purchased by the architect.

If any material or work used in the construction of the building be already upon the ground, or come into possession of the owner without expense to him, the value of said material or work is to be added to the sum actually expended upon the building before the architect's commission is computed.

### Supervision of Works.

The supervision or superintendence of an architect (as distinguished from the continuous personal superintendence which may be secured by the employment of a clerk of the works) means such inspection by the architect, or his deputy, of a building or other work in process of erection, completion or alteration, as he finds necessary to ascertain whether it is being executed in conformity with his designs and specifications or directions, and to enable him to decide when the successive instalments or payments provided for in the contract or agreement are due or payable. He is to determine in constructive emergencies, to order necessary changes, and to define the true intent and meaning of the drawings and specifications, and he has authority to stop the progress of the work and order its removal when not in accordance with them.

### Clerk of the Works.

On buildings where it is deemed necessary to employ a clerk of the works, the remuneration of said clerk is to be paid by the owner or owners, in addition to any commissions or fees due to the architect. The selection or dismissal of the clerk of the works is to be subject to the approval of the architect.

### Extra Services.

Consultation fees for professional advice are to be paid in proportion to the importance of the questions involved, at the discretion of the architect.

None of the charges above enumerated cover professional or legal services connected with negotiations for site, disputed party walls, right of light, measurement of work, or services incidental to arrangements consequent upon the failure of contractors during the performance of the work. When such services become necessary they shall be charged for according to the time and trouble involved.

### Drawings and Specifications.

Drawings and specifications, as instruments of service, are the property of the architect.

## TESSERÆ.

### Vanbrugh's Buildings.

SIR JOSHUA REYNOLDS.

IN the buildings of Vanbrugh, who was a poet as well as an architect, there is a greater display of imagination than we shall find perhaps in any other; and this is the ground of the effect we feel in many of his works, notwithstanding the faults with which many of them are justly charged. For this purpose Vanbrugh appears to have had recourse to some of the principles of the Gothic architecture, which, though not so ancient as the Grecian, is more so to our imagination, with which the artist is more concerned than with absolute truth. He had originality of invention, he understood light and shadow, and had great skill in composition. To support his principal object he produced his second and third groups or masses; he perfectly understood in his art what is the most difficult in ours—the conduct of the background, by which the design and invention are set off to the greatest advantage. What the background is in painting, in architecture is the real ground on which the building is erected; and no architect took greater care than he that his work should not appear crude and hard—that is, it did not abruptly start out of the ground without expectation or preparation.

### Luca della Robbia and Majolica.

L. ARNOUX.

We understand by majolica a pottery formed of a calcareous clay gently fired, and covered with an opaque enamel composed of sand, lead, and tin. This enamel, although melted at rather a low temperature, is much hardened by the oxide of tin it contains, and adheres perfectly to the biscuit. This biscuit has generally a light yellow colour, disappearing under the opacity of the enamel; and one of its main characteristics is to effervesce when tried by acids. It was only in the beginning of the fifteenth century that it occurred to Luca della Robbia, a Florentine sculptor, to protect his figures from the injuries of the weather by covering them with a coat of opaque enamel; he called them *terra invetriata*, and they had immediately a great success. Luca would doubtless have brought this art to a high degree of perfection if he had not died in 1430, being not more than forty-two years old.



However, this kind of manufacture was carried on by his brothers and nephews for a little more than a century, a fact which explains why we attribute to Luca della Robbia so many pieces he has not made, but which have been certainly executed by his family. It was seventy years after Luca della Robbia that some potters of Pesaro thought at last of applying to their work the enamel made by that artist. Previously to that time they had tried to make a sort of white pottery by covering their red clay with a thin coat of a whiter clay, glazing the whole with a red one, and so forming the ware called by amateurs *mezza-majolica*. As the glaze was very soft, it was liable to be affected in colour by sulphureous gases and take different hues. This *iridescent Italian ware*, anterior to the majolica, belongs to the end of the fifteenth century. When these potters, therefore, adopted the enamel of Luca della Robbia, it made quite a revolution in the ceramic manufacture of the time. Some persons called it *porcellana*, but the name of the majolica prevailed, and shows that Italy took its receipt for the island of Majorca. It was from 1540 to 1560, during the finest artistic period, that the best pieces of majolica were made. The Duke Guidobaldo took this manufacture under his patronage. By his orders beautiful services of majolica were made, which he used to send to the princes of his time, in the same way as the French kings have done since with the Sèvres porcelain. Although Michael Angelo, Raphael and Julio Romano could not devote any of their time to majolica, their paintings, at any rate, had a great influence on the decoration of this pottery, and we can frequently recognise their designs on the majolica of the sixteenth century.

#### Roofing Slates.

PROFESSOR SULLIVAN.

Good roofing slate should be of an uniform fine grain, should split easily into even plates, which may be easily pierced with holes by a sudden blow of a sharp-pointed instrument without being fractured. The colour should not be very dark, as this indicates a large quantity of carbonaceous matter, the presence of which assists in the decomposition of the slate. It should also be free from pyrites. Finally, it should not absorb much water either by its surface or edges, a point which is readily ascertained by weighing a piece of the dry slate, plunging it into water, and then weighing it again when the surface has partially dried.

#### Arithmetical Proportion in Painting.

THOMAS PHILLIPS, R.A.

One main point in the perfection of composition relative to form, technically speaking, and without reference to subject, consists in that proportional division of the surface employed, which at once presents to the eye an agreeable combination of forms and spaces. "Proportioned quantities," says Lomazzo, "is the matter of painting; and form is the regulator of those quantities; and it extends throughout the whole surface of a picture." Such is the language of an author, who, living at a time when the art was highly cultivated and employed, must have received his tenets from the best authorities. What I mean by proportional quantities, or divisions of the surface, will be easily comprehended in its principle, though there may doubts arise in many minds as to the practical application of it. There are, however, some points upon which all agree; such as the impropriety of having many equal parts, or parts equal in quantity, or many similar forms; or of having the forms of diverse parts so range with each other that they may not easily be separated. On such points there can be no doubt: experience has taught us how much delight our eyes receive from variety and distinctness of form; but the exact proportion of parts which is requisite is not so easily determinable. The more I have considered the subject, and the more I find myself compelled by practice, the more I am satisfied that its basis is determinable by numbers. I say the basis upon which it rests; for I conceive that the nearer an artist approaches to some arithmetical proportion in, or between, his masses, or his forms and spaces, among themselves, or each to the other, the more acceptable will his compositions be; not only to those initiated in the art, but also to the common observer.

#### Wren's Construction.

JOHN CLAYTON.

It will be hardly necessary to observe that Wren's towers and spires were built "in the most substantial and workmanlike manner," and to adapt the words of modern specifications still further, "the materials used were the best of their respective kinds;" but here ends the similitude. Wren put a different construction on these words from that often given in the present day; with him none of the funds which should be expended in stability were wasted in decoration—a fault which is perhaps mainly attributable to the present defective state of competitions, with which Wren was not troubled. The walls of the towers vary from 5 feet to 7 feet in thickness, and are of

solid masonry, sometimes backed up with brick, but generally with stone of a rougher description. The stone is Portland, the timber oak, and the lead must have weighed at least 10 lbs. to the foot superficial. The floors in nearly all the towers are carried upon corbels, a preferable mode to inserting the ends of the beams in the walls, as the floors are more readily replaced when decayed, and the walls are not so liable to be injured by fire or strains. The towers have in nearly every instance convenient access to the belfry or parapet by circular stone staircases; and it is worthy of notice that the front line of the steps runs to the centre and not to the face of the newel, as is usual in Gothic staircases; this perhaps occasions a little more work, but gives a much better tread. The block cornices and enriched parapets, which are so frequently imitated in the more modern parts of the metropolis, were first used by Wren.

#### Development of Mouldings.

JOHN RUSKIN.

The mouldings of the earlier times were, in the plurality of instances, composed of alternate square and cylindrical shafts, variously associated and proportioned. Where concave cuttings occur, as in the beautiful west doors of Bayeux, they are between cylindrical shafts, which they throw out into broad light. The eye in all cases dwells on broad surfaces, and commonly upon few. In course of time, a low ridgy process is seen emerging along the outer edge of the cylindrical shaft, forming a line of light upon it and destroying its gradation. Hardly traceable at first, as on the alternate rolls of the north door of Rouen, it grows and pushes out as gradually as a stag's horns, sharp at first on the edge; but, becoming prominent, it receives a truncation, and becomes a definite fillet on the face of the roll. Not yet to be checked, it pushes forward until the roll itself becomes subordinate to it, and is finally lost in a slight swell upon its sides, while the concavities have all the time been deepening and enlarging behind it, until, from a succession of square or cylindrical masses, the whole moulding has become a series of concavities edged by delicate fillets, upon which the eye exclusively rests.

#### Estimates of Light.

ROBERT HESKETH.

The distance to which light passes into a room after admission, though it makes no difference as to quantity (because exactly as the intensity of light diminishes, so the area of surface lighted increases, viz., as the square of the distances from the opening to the parts where it falls), yet, in practice, a room is found to be much better lighted when the light passes far into a room than when only to a short distance. This effect is caused perhaps, first, by the eyes adapting themselves to particular lights by a slight alteration in their form; and thus, if a room be partially lighted, they adapt themselves to the stronger partial light, and the other parts appear more gloomy. The converse of this is shown by the effect of sunlight produced at dioramas, &c., by the direct light from the sky contrasted with the darkness of the remainder of the room. The second cause is, perhaps, the better adaptation of the whole room to use when all is sufficiently lighted than when part is lighter than necessary, and part too dark for comfort. There are probably no means of forming an exact estimate of the value of the distance traversed by light after admission before it falls on the surfaces of the room. The value certainly varies where the distance varies, but it also does not vary so rapidly as the distance. From this (and consideration of facts), I think the effect (though not the quantity) of light may be deemed to vary as the square root of the average distance through which it traverses a room. For ascertaining, then, the effective light, the numerical value of the proportionate quantity should be multiplied by the square root of the distance.

#### Illuminated Manuscripts.

SIR FRANCIS MADDEN.

From the eighth to the eleventh century occur in Greek and Latin manuscripts initial letters of a large size at the commencement of books and chapters, fancifully composed of human figures, animals, birds, fish, flowers, &c. In Montfaucon an alphabet is given, selected from manuscripts of the ninth and tenth centuries, many of which are sufficiently singular and ingenious—such, for instance, as an H, composed of two men, each placing one foot on a blazing altar; a T, represented by a fox on its hind legs, holding a pole on its mouth horizontally, from the ends of which hang two cocks, &c. These letters are called by the Benedictines *historiées*, because they often bear reference to or illustrate the text to which they are prefixed. Thus, a manuscript of the thirty-fourth Homily of St. Chrysostom, commencing "Yesterday we returned from battle," is headed by a capital E, in which is depicted a warrior, armed with a spear. So in another tract, on "The Pains of Hell," the initial letter K represents an enormous serpent swallowing a man. The imagination of the illuminator supplied an inexhaustible source for this species of letters.

















DESIGN FOR CHURCH AT CRICCIETH,  
SUBMITTED IN LIMITED COMPETITION BY

Spottiswood & Co. Ltd. London.





Askham Hall.  
for  
Sir Andrew Fairbairn, M.P.

Mess<sup>rs</sup> Chorley & Cannon, View of Staircase.  
Architects.  
15, Park Row, LEEDS.







## ILLUSTRATIONS.

"THE HISTORY OF ART."

WE publish the second portion of the cupola painting by M. EHLMANN, which is described on another page. The artist was born in Strasbourg, and was a pupil of M. GLEYRE.

STAIRCASE, ASKHAM HALL.

THIS interior is a companion to the view of Sir ANDREW FAIRBAIRN'S house, which appeared on the 3rd inst., and is the work of Messrs. CHORLEY & CONNOR, of Leeds.

DESIGN FOR CHURCH AT CRICCIETH.

THE design which we publish this week was submitted by Messrs. CHRISTOPHER & WHITE, of 16 Bloomsbury Square, in the recent limited competition for the new church at Criccieth, North Wales. The authors of the design were invited, with four other architects, to send in plans and estimates of a nave to seat 500, to be built with the express purpose of future enlargement, the mode of such enlargement to be indicated on the plan. The sum to be expended on the nave, exclusive of chancel and aisles, &c., was not to exceed 2,000*l.*, and under these circumstances it was felt to be impossible to include a clerestory in the design. The church, when enlarged, was to seat about 750, and the drawing shows the complete design.

The design of Mr. DOUGLAS, of Chester, is to be carried out.

## ROYAL SCOTTISH SOCIETY OF ARTS.

A MEETING of this Society was held on Monday, Mr. James Gowans, vice-president, in the chair. Dr. W. G. Black exhibited and explained the action of an air-heater, contrived by himself, for warming the air of rooms. The apparatus consists of a chamber of sheet-iron, so constructed that it can be fitted on the top of a stove. Air, allowed to enter it by one pipe, is heated in passing through, and discharged by another pipe of the same dimensions, in such a way that it will ascend towards the ceiling, and thence descend gradually and diffuse itself through the apartment. This method, Dr. Black submitted, did not involve any admixture of smoke with the heated air; it dried the air during the time it was in the chamber, and it would have a sanitary effect in destroying organic germs. Some discussion followed, in which Dr. Macadam said he did not see that the apparatus could provide for the ventilation of a room; but as far as the heating of the air was concerned, he had no doubt it would have that effect. Mr. Cay asked whether air treated as proposed would be left with the proper amount of moisture. Mr. Peebles suggested that it would be an improvement to introduce air from the outside into the heating chamber. Mr. Reid remarked that as to ventilation he had found it an effective plan to introduce ventilation into the flues, as close as possible to the cornice. Dr. Black, in reply, said that the question of ventilation had not been contemplated in his contrivance. The communication was referred to a committee.

Mr. Sang submitted "An elementary view of the strains on the Forth Bridge due to the shifting load." After explaining how the construction of the bridge in question differs from that of an ordinary stone bridge on the one hand, and that of a suspension bridge on the other, he went into calculations to show the strains due to the load that could be brought upon such a structure, irrespective of the materials of which its cantilevers are built. Taking the two central cantilevers, supported by the four piers on Inchgarvie, he made out that, when the whole length of both was covered with loaded waggons, there would be a load of nearly 1,000 tons to be carried by each of the four piers. He went on to point out that the greatest inequality of strain would occur when one side was entirely covered with waggons and the other entirely free. In this case he calculated that, taking leverage into account, while two of the piers formed the fulcrum, there would be a lifting strain on the other two of 2,700 tons. There must, therefore, be upon those two piers a counterpoising load of equivalent weight; and as the moving load might be shifted to the other end of the double cantilever, the counterpoising weight on the whole four piers would require to be at least 5,400 tons. Similar calculations were given regarding the double cantilevers towards the shore ends of the structure, with respect to which different conditions were shown to bring out somewhat different results. Mr. Sang concluded by intimating that other points would be taken up in a subsequent paper. In the course of discussion,

Mr. Westland pointed out, among other things, that a counterpoise such as Mr. Sang had shown to be required was provided by tying down the piers to masses of masonry. Mr. Cay spoke of the wind pressure as still a doubtful element in connection with such a structure.

## THE PETERBOROUGH CATHEDRAL SQUABBLE.

THE following is the statement of the Society for the Protection of Ancient Buildings on the controversy between various members of the Restoration Committee:—

It is no part of the duty of the Society for the Protection of Ancient Buildings to see to the maintenance of contracts; but when a contract of recent execution has been entered into for the reconstruction of an ancient tower, "stone for stone," and it is proposed essentially to vary that contract and to construct a new tower, it becomes the duty of this society to call the attention of the subscribers and of the public to the following statements made by, or on behalf of, the Dean and Chapter, one of the parties to the contract, and of the Restoration Committee, "set up to give confidence to the public," in this very matter of the devotion of the funds subscribed to the purpose for which the appeal to the public had been made.

On January 29, 1883, in an "authentic statement" forwarded to the *Times* for publication, Canon Venables states that:—

The Chapter-house and the Restoration Committee have come to the decision that the tower must be taken down without delay to the point indicated by Mr. Pearson, together with the piers, and rebuilt, as far as possible, stone for stone. Mr. Pearson's estimate for this taking down and rebuilding is 13,000*l.* This does not include any additional height being given to the tower which is desired by many. At present the restoration fund stands at about 3,700*l.*

On March 1, 1883, the *Times* reports that:—

The first of a series of diocesan meetings, to be held in furtherance of the restoration of Peterborough Cathedral, was held at Peterborough yesterday, the mayor of the city presiding. . . . The Dean of Peterborough made a statement showing that the architect consulted (Mr. Pearson) had recommended two alternative plans. The first was to put centring into the arching of the condemned central tower, and to provide a strong concrete foundation on which the pillars might be rebuilt, and only to repair the stonework above and between them and the belfry stage, and then to rebuild and restore the lantern. . . . The committee appointed to carry out the undertaking decided to adopt plan No. 2, viz., 'to take down all the work over the arches and also the arches themselves, and to rebuild the whole.' . . . There was no intention to destroy the ancient character of the present tower. Every stone would be taken down and numbered, and replaced exactly as at present.

On the same day, March 1, the Dean writes to this society:—

I must apologise for not answering your letter sooner (a letter advising plan No. 1 in the foregoing statement). . . . I have now read your letter to Mr. Pearson, and he desires me to say that he adheres to his former opinion that any work done to the tower short of its entire reconstruction would not be satisfactory. It is better to make the whole thoroughly secure than merely to patch, especially as it seems desirable to raise the tower, should funds be forthcoming, and this could not be done with the present piers and foundations. I wish, however, to observe that the tower will be *accurately reconstructed* (here the italics are the Dean's) *stone for stone*. Every stone as taken down will be numbered and replaced.

On March 19, 1883, Canon Argles writes to this society:—

I beg to affirm the full determination of the Chapter that the tower shall be rebuilt, stone for stone, exactly following the drawings and photographs which have been taken of every part of that which is to be taken down.

On March 30, 1883, the clerk of the Chapter writes to this society:—

I need not assure you that they (the Dean and Chapter) desire, under the fullest sense of the responsibility imposed upon them, to make the best possible provision for the effective preservation of the building which is committed to their charge; and this they believe they have done by adopting the plans which they have now definitely approved.

And on February 1, 1884, the Dean, appealing through the *Times* for additional funds, and reviewing the history of the restoration, writes:—

Mr. Pearson, the Cathedral architect, when summoned to examine and report upon it, recommended that the upper portion should immediately be taken down, and that the whole of the central tower and the two eastern piers should be reconstructed. The Restoration Committee, at their first meeting on January 24, 1883, adopted the report of the architect, and a contract was entered into for the reconstruction of the tower, as recommended in the report, at an



estimated cost of 13,073*l*. The subscriptions already promised, as will be seen by the advertisement in the *Times*, now amount to 19,548*l*. 5*s*. 3*d*. This amount does little more than cover the contract for taking down and rebuilding of the central tower. No margin is left for incidental expenses, and a large sum is still necessary for insuring the safety of the choir and other important matters which must follow from what has been already done.

No word here about a new or raised tower, and this is the last appeal made to the public through the *Times*.

On May 7, 1884, in the presence of the Bishop of Peterborough, the Dean and Chapter, the Restoration Committee, and a numerous and distinguished assembly, with full masonic and religious rites, the foundation-stone of the tower to be reconstructed was laid by Lord Carnarvon, the plan of the proposed building was inspected and delivered by his lordship to the architect, with the request that he would proceed without loss of time to the completion of the work in conformity with the plan, and finally, and presumably for the safe completion of the work so augustly begun, prayer was offered by the Bishop of Peterborough.

It will thus be seen that the published intention of the Dean and Chapter and of the Restoration Committee was to reconstruct the tower exactly "stone for stone." The proposal to raise the tower had been before them, but had been definitely put aside in favour of a plan which in terms excluded that proposal (for a reconstruction of the tower "stone for stone" is incompatible with the raising or other alteration of the tower). And upon that published intention and contract opposition was set at rest, and funds were appealed for and obtained.

It is now proposed to cancel that contract, and to do the very thing its avowed purpose and the published intention of the Dean and Chapter and of the Restoration Committee, "set up to give confidence to the public," purported precisely to exclude the possibility of.

It is possible that behind the published intention there may have been in the minds of some the unpublished intention not to reconstruct the tower; but, when funds had been obtained upon that pretence to build up the piers to support it, then to suggest that it would be "lunacy" to lose so fine an opportunity. The tower is down. Why not build upon the piers competent to support it a new old tower, "early and good," and trust to bluster and the weariness of the public to get what is wanted?

It is possible enough. But it is to be hoped that the public will not allow itself to be wearied out of an historical and beautiful possession, or to be wearied into permitting a scandalous breach of public faith, or into a permanent memorial of one great "lunatic," whom the world will do well at once to forget.

The Dean and Chapter and the Restoration Committee entered into a contract with the public to rebuild the tower of Peterborough Cathedral, "stone for stone," exactly as it stood before it was by them pulled down. To that contract we hold them still in honour to be bound, and we appeal to them, and especially to the Dean and Chapter, in whom the legal power is vested, to let nothing whatever, no pressure of opinion, public or other, induce them to give way. They are the custodians of the building for future ages as well as for the present, and they must look to it that in this matter they do their duty unflinchingly.

The tower to be reconstructed is a fine piece of fourteenth-century work. It is good in design throughout, good particularly in the bold prolongation of the windows and the adjustment of their sills to the slopes of the roofs, a characteristic of the design which would be lost, misplaced, or stultified were the tower to be raised or another tower to be built upon it. The Dean and Chapter and the Restoration Committee need not fear, then, that what they are asked to preserve will not be worth the struggle they may have to undergo to maintain it. The tower of Peterborough Cathedral is an historical document of quite exceptional value, worthy on that account alone to be preserved; but it is also beautiful in itself, beautiful in association with the other features of the cathedral, and singularly skilfully designed to meet and overcome the peculiarities of the circumstances under which it had to be constructed.

### EDINBURGH ARCHITECTURAL ASSOCIATION.

At the meeting of the Edinburgh Association on Monday, Mr. Washington Browne in the chair, Mr. John Kinross read a paper on "The Study and Progress of Architecture." After a humorous reference to the way in which many young men found themselves in what he called the "ill-paid profession," Mr. Kinross proceeded to notice the chaotic state in which the question of style was at present, and the difficulties which that presented to a student in determining what style he should devote his attention to. For a comprehensive study of archi-

itecture time and means were necessary, and he advocated, if that were possible, the study of the noble works of Italy and Greece, not merely from drawings, but as they stood on Italian and Grecian soil. The refining effect of such study could not be over-estimated. He differed from Mr. Fergusson in thinking that Scottish work was not worthy of study. There was much beautiful early work still remaining in Scotland, and also admirable domestic work, which perhaps deserved to be studied more than any other kind of Scottish work. Scottish country mansion-houses seemed to grow out of the ground; they fitted in to nature; and the proportion of their rooms and the beautiful detail that was in them made them worthy of study. In speaking of progress in modern architecture, Mr. Kinross said they had in Edinburgh a very brilliant example as to the effect of very careful study of the Italian Renaissance and a judicious use of the best materials; and they had also a very fine example of what the study of their old Scottish would lead to in the new block built by Mr. Findlay at the Water of Leith. These buildings, though in very different styles, showed beautiful results of careful study and good taste. In England, it was remarked, great progress had been made during the last twenty years, and of that some account was given—the work of the leading architects being referred to. These men, he said, by their work, showed that their study of old buildings had been very complete, and even granting that, to begin with, they were men of great capacity and taste, it had been only after much hard work that they had arrived at their present eminence. Great reputations were not easily won or supported, but every student could determine that the noble art of architecture should not suffer at his hands, and endeavour to follow the great men who went before him.

Mr. McGibbon said he was satisfied that no architecture was more worthy of their study than the Scottish. It had not the characteristics of Classic architecture, but it had characteristics of its own. He hoped that none of them would be discouraged by the great admiration which Mr. Kinross had expressed for the foreign birds, which were finely feathered, but that they would seek to study what was near to their hand. It was very desirable that young men should have an ambition to see the great buildings which existed in other parts of the world; but, in order to fully appreciate these, they should first study what was near them, and know what study was.

The Chairman thought that Mr. Fergusson, of all critics, was most misleading and least to be trusted by young students, especially in reference to Scottish architecture. He did not know whether Mr. Fergusson had ever studied it himself. He spoke of it as if he had not. *Apropos* of a remark by Mr. Kinross, that progress was only possible by the mingling of the best of every style, the chairman said it was only a first-rate man that could be trusted to mix styles. He should dread the result if any second-rate man tried it.

Mr. Kinross, in his reply, said that Mr. Fergusson might be unsafe, but he was the only authority they had. It would certainly be desirable if they had a book on architecture not so voluminous as Mr. Fergusson's, and safer.

The thanks of the meeting were given to Mr. Kinross for his paper.

### EGRESS FROM BUILDINGS.

THE Committee appointed by the Glasgow Town Council to consider the means of egress from music-halls and public buildings in the city have, after a conference with the Master of Works, prepared the following document:—

*Regulations to be observed in the Construction, and during the Occupancy, of all Buildings intended for accommodating large numbers of people, such as Theatres, Music-halls, Public Halls, Churches, &c.*

#### CONSTRUCTION.

1. Every floor or part of a floor of the building shall be provided with a separate egress or egresses, and shall have a capacity for same equal to one foot of breadth for every seventy persons which can be accommodated in each floor or section thereof to which such egress pertains.
2. Where entrance is obtained to any part of the building by means of a staircase, the accommodation in such part shall be diminished in the proportion of ten persons per foot in breadth of entrance for each tier of the building ascended.
3. All stairs to be provided with hand-rails on both sides, and each stair exceeding six feet in width shall be divided by a substantial hand-rail fitted up in the centre.
4. All stairs shall be constructed without wheeling steps, and each flight not to have more than twelve steps, each step to be not less than eleven inches broad and not more than six inches deep, and no hanging stairs will be allowed unless supported at the outer end.
5. Every plathead shall be of the same width as the stair.
6. All staircases and lobbies shall be constructed of non-inflammable material, and shall be so placed that they can be conveniently got at from every part of the building.



7. Doors at all parts of the building to open outwards. The following rules are to apply to theatres and places of amusement only:—

8. The rows of seats in the auditorium shall be intersected by passages not less than 4 feet wide leading to the exits; side passages shall not be less than 2 feet 6 inches wide, and each row shall not contain a greater number than 10 seats for each passage by which it is bounded.

9. A safe and easy means of exit must be provided for the orchestra.

10. All rooms for performers must be constructed of non-inflammable materials, and provided with large and sufficient lobbies, and easy means of access to the street.

11. No gates shall be fitted up at pay-boxes unless they yield to the slightest pressure from within, and must not be fixed by any bolt or bar.

12. No building to be used as a place of amusement will be authorised where the pit is more than three feet above the level of the street.

13. No place of amusement capable of containing 1,000 persons or upwards shall be allowed to be built unless sufficient access can be obtained to it from at least two streets or lanes.

#### LIGHTING.

14. Every stop-cock shall be so placed as to be easy of access and near to the external walls.

15. Separate stop-cocks shall be provided for the stage, centre light of auditorium, side lights of auditorium, passages, and lobbies.

16. The meters for the stage and centre light of auditorium shall be controlled from the stage, the others shall be under the special charge of persons whose duties necessitate a constant attendance near the site of the meter.

17. Oil lamps or candles in lanterns shall be conveniently placed in all lobbies and staircases, and kept lighted during the performance, and one main gas-cock must be provided outside the building.

18. No white metal pipes for gas will be permitted to be used in any part of the building.

#### PREVENTION OF FIRE.

19. Every theatre shall be connected with the Central Fire Station by means of several electric alarms, placed in various parts of the house—one from the stage, and one on each floor.

20. Sufficient hydrants must be placed on each side of the stage in such positions that the scenery will not at any time prevent the free access to them, and not less than two hydrants shall be placed on each tier, convenient of access at all times.

21. Sufficient hose-pipe shall be provided for, and kept attached to, the hydrants, the hose to be suspended in open boxes free from all encumbrances, ready for immediate use in case of emergency.

22. Three pails, filled with water, shall be placed on each side of the stage behind the wings, and wet blankets kept ready for use during the performance.

23. A sufficient number of firemen shall be in attendance during performances; they shall make a daily inspection of the fire-plugs and other materials under their charge, and must be under similar superintendence and control as those of the Municipal Fire Brigade.

24. Employés must be instructed as to the position and the use of the fire-plugs.

#### EXITS, &c.

25. All entrance doors must be kept open; and all exit doors within the building must be perfectly free from anything which would prevent them from being opened at any time during a performance.

26. The words "Way Out" shall be conspicuously placed over both sides of egress doors, as also the number of the persons which each part of the house is seated for.

27. No articles, or anything which would in any way interfere with the movements of the public, to be placed in the corridor.

*Note.*—Numbers 3, 7, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27 of the foregoing regulations shall apply also to existing buildings.

### LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

ON Monday Mr. J. A. Gotch read a paper on "English Houses in the Seventeenth Century." The lecturer said he would leave the broad path of history, and go down some of the by-way, and see the homes of statesmen and of men who made history in the days to which he referred. He invited his audience to enter the houses of noblemen and squires and people of the city, to see their domestic arrangements, the way in which the family lived, and the way in which the servants lived. They would find, he remarked, that the accommodation

in those days was very much the same as it was now, but that it was arranged in a much less convenient manner. Magnificence was the chief characteristic, and for this purpose a great deal of comfort was sacrificed. The lecture was illustrated by means of diagrams, one of which represented a palace built by the Earl of Dorset, who succeeded Lord Burleigh in the office of Lord High Treasurer; another illustrated the house of a squire of the time, such as Francis Tresham, who was implicated in the Gunpowder Plot, and a third showed the house of Sir Walter Raleigh. The lecturer quoted from the works of poets of the seventeenth century, thus bringing contemporary witnesses to give their evidence with regard to the home life of the period.

Mr. Edward Birchall, the president, who occupied the chair, said it was intended to have brought forward the question of the proposed incorporation of the society at that meeting, but the subject had been postponed.

### GLASGOW ARCHITECTURAL ASSOCIATION.

AT the last monthly meeting, the vice-president in the chair, a paper on "Local Building Stones" was read by Mr. R. C. Kerr, member. It was divided into two portions, the first an examination of stone in its original location from the standpoint of the geologist, chemist, and metallurgist; the second, stone, when employed in the building, considered practically.

In this examination over a score of different varieties, in common local use, and all found within forty miles distance of Glasgow, were reviewed. Of granites but little was said, as being more of an ornamental than really practical everyday building material. Sandstones, as almost exclusively employed, were treated on at length; and after a careful analysis of all the principal varieties within the area chosen, and taking into account the very different qualifications required for town and country atmospheres, Craigleith stone was considered most suitable for a manufacturing city such as Glasgow. Limestone was very seldom used unless in the form of mortar, for which purpose Arden quarries are most in repute, or at best but slightly as a decorative feature, like the cottage fireplaces of marble from Cambuslano, a village a few miles outside of Glasgow.

After an interesting discussion, opened by Mr. J. R. C. Honeyman, critic to the paper, a hearty vote of thanks was passed to the essayist.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### AN INTERVIEW WITH RUBENS.

One of the first of those connoisseurs who enriched England with examples of foreign art was Thomas Howard, Earl of Arundel. He was born in 1585, and succeeded his father in 1595. Several agents were kept by him in Greece, Italy, Germany, and the Netherlands, and whenever a relic of antiquity or a valuable example of art was met with they had instructions to purchase it. In this way his lordship secured 37 statues, 128 busts, and 250 inscribed stones, together with that valuable collection of gems which, having passed to the Marlborough family, was sold a few years ago at Christie's. The sculpture was presented to the University of Oxford by the Earl's grandson in 1667, and is known as the Arundel Marbles, but only one hundred and thirty-three of the inscribed stones escaped destruction in the Civil War, and the Parian Chronicle, which is the most valuable among them, was broken, one part having been used to repair a hearthstone. The Earl merits remembrance from architects, for he was the earliest to recognise the genius of Inigo Jones. The letter we now print was written on July 17, 1620, from one of Lord Arundel's agents in Antwerp, and it is doubly interesting from the reference to Vandyck:—

"Immediately on my arrival in this city, I presented your lordship's letter to Signor Rubens, the painter, who received and perused it with evident marks of satisfaction. I give you his reply:—'Although,' said he, 'I have refused to execute the portraits of many princes and noblemen, especially of his lordship's rank, yet from the earl I am bound to receive the honour which he does me in commanding my services, regarding him, as I do, in the light of an evangelist to the world of art, and the great supporter of our profession'; and, with other similar expressions of courtesy, he proceeded to make arrangements for her ladyship's sitting to him on the following morning: He has already sketched her likeness, with Robin the dwarf, the



fool, and the dog. The sketch, however, still requires some trifling additions, which he will make to-morrow; and on the following day her ladyship starts, with the intention of sleeping at Brussels. It so happened that, when Rubens began his work, he was unable to lay his hand on a piece of canvas sufficiently large for his purpose. Having drawn the heads, therefore, as they should be, he sketched the postures and draperies of the figures on paper, and finished a separate drawing of the dog; but he has ordered a canvas of the proper size to be prepared, and will himself copy what he has done, and send the copy, with the original sketches, to your lordship. He assures the countess that he will paint no person unless by your lordship's recommendation. Vandyck lives with Rubens; and his works are beginning to be scarcely less esteemed than those of his master. He is a young man of one-and-twenty; his parents are persons of considerable property in this city, and it will be difficult, therefore, to induce him to remove, especially as he must perceive the rapid fortune which Rubens is amassing."

#### BONOMI'S PROFESSIONAL CHARGES.

According to Noble, the employment of architects began to be systematised and the five per cent. rate introduced in the time of the Earl of Burlington, the amateur of whom Pope wrote. "It was usual to employ men for the different classes of work, and 'master artificers were not only distinct in their trade or calling, and invariably so employed, but also individually responsible for the due and proper execution of their respective works, at equitable and reasonable rates; but the architect and his assistants ascertained the quantities, and dated for, and determined the value of the various materials and labour.' Measurers were sometimes employed by the artificers as a protection against architects' errors, and it has been alleged that it was easy to obtain their services as witnesses in support of excessive charges. The first measurer ever remunerated by a commission on the value of work was a man named Hele, who flourished about the middle of the last century, and he is described by Noble as a very able and avaricious individual. From the existence of measurers the architect's position was rendered more difficult, and, in consequence, there was some variation in the profession with regard to fees. The scale that was issued by Joseph Bonomi, A.R.A., in 1794, is supposed to have been but one among several examples. He was an Italian, who assisted the Brothers Adam. As he was a relative by marriage of Angelica Kauffmann, he secured the influence of Sir Joshua Reynolds, and indeed the president resigned his office as well as his membership when he failed to have Bonomi elected an Academician. His best known work is *Roseneath*, Dumbarton, N.B., for the Duke of Argyll, and he was patronised by the English nobility. He died in 1808. The following is the scale:—

Terms of JOSEPH BONOMI, Architect, No. 76 Great Titchfield Street, London, January 1794.

##### No. I.

- Five per centum commission upon the whole expense of the building, labour, and materials, at London prices;
- For which B. makes the design, furnishes all the necessary working drawings, and four fair drawings, two plans, one front, and one section; makes the necessary estimate; and attends the execution of the work.
- If a clerk of the works is required (as he should be), he is to be paid by the employer.
- All the journeys, *to and from*, to be paid at the rate of eighteen pence per mile.
- If it should be desired, after the building is completed, to have it measured and valued, the expenses attending such measurement and valuation are to be paid by the employer.
- If the expense of the building exceeds the estimate given, then B. demands no more than the commission upon the amount of the given estimate, provided though that the overplus is not caused by additions and alterations in the design.

##### No. II.

- When it is only desired to have a design, with the necessary drawings for execution, &c., and an estimate, but without any attendance to the execution of the building, then such design, drawings, and estimate are to be paid at the rate of three per centum upon the amount of the estimate, at London prices.

##### No. III.

- If B. is called to settle some business, to give advice, to make additions, or alterations, &c., then B. demands five guineas per day, besides the journeys, paid as above; and, if any drawings are wanted after B.'s departure from the place, such drawings, valued at the rate of five guineas per day, are to be paid extra.
- After the design has been approved of, if any alterations, additions, or diminutions are required to be done, the neces-

sary drawings, requisite in making such alterations, &c., are to be paid extra, at the above rate.

In case that a design has been made, complete, and approved of, and another design in lieu thereof ordered to be made, then the former design is to be paid at the rate of three per centum, and the second at five per centum commission, upon the whole expense, as above, when executed by B. If not executed, then such second design also is to be paid at the rate of three per centum, as expressed by No. II.

#### SIR JOHN SOANE'S DESIGN FOR A PALACE.

In 1772 the silver medal of the Royal Academy was gained by John Soane, a bricklayer's son of the age of twenty, for his drawing of Inigo Jones's Banqueting-hall, and in 1776 he won the gold medal with a design for a triumphal bridge. Soon afterwards he was introduced to George III., through the kindness of Sir William Chambers, and he obtained an allowance of 60*l.* per annum for three years, with 30*l.* for travelling expenses to Rome, and at the expiration of three years 60*l.* for his return journey. It was natural that among the architectural visions of his student days (or, as Soane said, "among the wild effusions of a mind glowing with an ardent and enthusiastic desire to attain professional distinction in the gay morning of youth") there should be one of building a palace for so good a monarch. "No subject," he said, "can be more interesting to the architect, nor better calculated for the exercise of his skill and taste, than a palace for the sovereign. To unite the grand and the useful is a most difficult task; for whilst internal convenience requires several floors to be placed one above the other, external magnificence admits only of one floor, raised on a lofty and imposing basement."

The design which he made in Rome in 1779 is to be seen in that museum which is less visited than it deserves—Sir John's house in Lincoln's Inn Fields; and the following description of it was given in a book that was privately printed:—

"In composing this design, I laboured to avail myself of the advantages arising from the contemplation of the remains of the great works of the ancients, as well as of the observations and practice of the moderns. With these feelings, I endeavoured to combine magnificence with utility, and intricacy with variety and novelty. Vignola's celebrated palace at Caprarola suggested the general outline of the plan; and the villa of Adrian at Tivoli, the palace of Diocletian at Spalatro, the immense remains of the Imperial palace of the Cæsars in Rome, the baths of the Romans, and the interior of the Pantheon, with its superb portico by Agrippa—exemplars of magnificence, intricacy, variety, and movement, uniting all the intellectual delights of classical architecture—were objects calculated to call forth my best energies. The portico is copied from that of the Pantheon. In the centre of the building is a dome, under which is another, of a smaller diameter, leaving a space for the admission of light, after the manner of the "*lumière mystérieuse*," so successfully practised in the great Church of the Invalides and other buildings in France. The decoration of this interior dome, by aid of appropriate machinery, is designed to form a complete representation of the solar system. In making this design, besides the advantages already mentioned, I had frequent opportunities of showing the drawings in their progressive state to my honoured and lamented patron, the late Lord Camelford, then Mr. Thomas Pitt, and of making such alterations in them as were pointed out by the classical taste and profound architectural knowledge of that accomplished nobleman. This palace was proposed to have been erected in Hyde Park, with an extensive series of magnificent hotels, relieved by occasional breaks, bounding the park, improving its general appearance, and providing an ample fund to defray all the expense attending the completion of the design."

Sir John Soane might consider himself to be a successful architect, but one of his bitterest disappointments was the failure to obtain a commission for his palace. His loss had the effect of making him advocate the system of limited competitions. "If this course had been followed," he wrote, "instead of that monstrosity at Pimlico yclept Buckingham Palace, raised, to the disgrace of the nation, at an enormous expense, in a swamp surrounded with nuisances of a most disgusting character, we might have seen a royal palace erected on that elevated and salubrious spot, Constitution Hill." Sir John appeared to have no misgiving about the design which was likely to be selected.

Messrs. Archibald Smith & Stevens, of Janus Works, Queen's Road, Battersea, have been instructed by the Aerated Bread Co., to erect at their new premises, Eastcheap House, Eastcheap, one of Stevens & Major's Patent Hydraulic Balance Passenger Lifts, with their compensating apparatus for reducing the amount of water used. The architect of the building is Mr. George Edmonds, of Brompton Road, S.W.





### Architectural Competitions.

SIR,—At a meeting of the Council of the Society of Architects held this evening, it was determined to send the letter, of which a copy is enclosed, from the Competitions-Memorial Committee relating to various suggestions made by our Society with regard to architectural competitions, to the professional press. Therefore if you could find room to insert it, with this, in your next issue, you would oblige,

Yours, &c.,  
G. A. T. MIDDLETON,  
Secretary of the Society of Architects.

January 13, 1885.

[COPY.]  
Competitions-Memorial Committee,  
9 Conduit Street, Hanover Square, London, W. :  
December 9, 1884.

SIR,—In reference to our interview on Thursday last, when Mr. Hugh Roumieu Gough and yourself attended our Committee as a deputation from the Society of Architects, we have to inform you that while our Committee agree with you in thinking that the adoption by promoters of competitions of many of your suggestions is desirable, they do not consider the present an opportune time for pressing them, the main point—viz., that of the appointment of an architectural assessor—being as yet not so universally accepted as to justify our Committee in pressing for additional conditions which might but imperil the adoption of the main point. Our Committee, however, are so impressed with the desirability of your suggestion (from the point of view of all parties) of the second advertisement after questions have been put, that they propose to add this to their communications to promoters. Thanking you for your suggestions, and the interest you have taken in the matter,

We are, Sir, yours faithfully,  
(Signed) HENRY CURREY,  
COLE A. ADAMS,  
ASTON WEBB.

To G. A. T. Middleton, Esq.,  
Secretary of the Society of Architects.

### Utilitarianism in Education.

SIR,—I am afraid that my inoffensive letter asking for information has made Mr. Harvey more angry than befits the pupil of a philosopher. I hope it may pacify him to learn that his last letter has checkmated me. Mr. Harvey proposes that you should illustrate one of his own works as an exemplification of what Semper's principles have done for him. I am sure that the view will be studied with interest and kindly feeling, but for my part I must decline to criticise it. An architect so often has to submit to the caprices of clients that the executed work does not always correspond with the original design, and I have known architects who have been more severe than a newspaper critic when they spoke of their own buildings. Custom has recognised the principle of reticence with regard to the work of living architects, and it is well to remember the maxim of Sir Henry Wotton, that it is "almost harder to be a good censurer than a good architect."

But Mr. Harvey's own letter seems to me to be a confirmation of what I wrote. I was sceptical about the utility of Semperism, and I find that Mr. Harvey acknowledges that he has strayed beyond his master's leading-strings; and, so far as I understand his letter, he believes that it is the tendency of Semper's teaching to make man free. In other words, that rigorous system (which may be termed fatalism applied to art) drives men who are artists into revolt. If so loyal and enthusiastic a disciple as Mr. Harvey has shown himself to be finds it more satisfactory to himself to produce forms of which his master could not approve, what is the advantage of Semperism as a system of art teaching? It may be called the philosophy of art, or the romance of art, or what not, but I have yet to learn how it increases a student's powers and enables him to design better buildings. Until that can be done I am entitled to my own opinions.

I have been asked by Mr. Harvey whether I should object on utilitarian grounds to the conversion of the "Principia" into a handbook for students, and I have no hesitation to answer in the affirmative. The "Principia," if one may judge from what has been said of it, testifies to the power of the human intellect; it is a sort of extraordinary high-tide mark in mental history, and Newton is justly entitled to be revered while the world lasts. But is it not one of those books which in the present state of things may be read by deputy? Herschel compares Newton's geometry to the bow of Ulysses, which none but its master could bend. Still, the influence of Newton is very widely extended in science, and I dare say we are all the better for him. His book is an excellent exercise, and a student who could comprehend easily the mathematics of the "Principia" need not fear to grapple with a stiff book on construction. But

the training and intellect that are necessary for the feat are not vouchsafed to all of us, and I must frankly say that I have not found mathematicians of a high order to be such wonderful fellows when they had to deal with this work-a-day world. I have had some experience of the son and pupil of one of the greatest mathematicians since Newton's time. He had all the sublimities of the science at his fingers' ends, but he could not be depended on to work out very simple problems in quantity-taking with accuracy. His thoughts may have taken an extremely wide sweep before they reached the dimensions with which he had to deal; and although it was flattering to think that one's simple work had undergone a transforming process, still, in a push for time, it was rather embarrassing.

I have occupied so much of your space, because I consider that just now it would be well if students applied the test of utility to the educational schemes which are being concocted for their edification. It would be a consummation devoutly to be wished if everyone was equal to such a test as that in the programme which was issued by the Institute in 1862. But how many among the architects who have been most successful would care for the test? Is it quite certain that the whole of the Council of the Institute are qualified to answer all the questions in that and similar programmes? What is more important, is there any certainty that the majority of clients would set a higher value on an architect who had the "Principia" and "Der Stil" by heart, and is it not more likely that to the average British mind a book on the strength of materials would seem better worth attention? One class is proclaiming architecture to be a fine art, and a man who wishes to erect a building concludes that in an architect's hands it will become as much an object of luxury as a costly marble statue, and as ill-adapted to use. Builders and engineers, foremen and measurers, who form a second class, tell him that they think mainly of convenience and economy, but that they can give him as much ornament as he wishes. Every day adds to the evidence that the chances are in favour of the building going to some one among the second class. At such a time will Semper and Newton bring back clients, or counter-balance the reputation for practicality which engineers have contrived to gain?

Yours obediently,  
CUI BONO.

### CHURCH-BUILDING AND RESTORATION.

**Rhyl.**—The memorial-stones of a Congregational church have been laid. The building will comprise church to seat 600, with lecture-hall to seat 400, this latter to be thrown open to the church if required. The style of the building is Early English. The walls externally will be faced with limestone parpoints from the Graig Quarry, Denbigh, relieved with freestone dressings from the quarry of Messrs. Williams & Davies, at Gwespyr. The architect is Mr. Owen Edwards, of Rhyl. Messrs. Foulkes & Son, of Rhyl, are the contractors.

**Manchester.**—Plans have been prepared by Mr. Henry Charlewood, architect, of Manchester, for the proposed new mission church, St. Aidan's, in the parish of Christ Church, Bradford-cum-Beswick. The new church will contain between 400 and 500 sittings.

**Leith.**—A United Presbyterian church, capable of accommodating 1,070 persons, is to be erected for the Kirkgate congregation. From competitive plans sent in, those of Messrs. Shiells & Thomson, architects, George Street, Edinburgh, were selected, the designs being in the Italian Romanesque style. Accommodation will be provided for 594 persons in the area of the church, 437 in the gallery, and 40 in the choir seats. A hall is also to be erected capable of accommodating 480 persons, in addition to class-rooms, vestry, and cloak-rooms. The estimated cost of the buildings is 4,800*l*.

**Diocese of Newcastle.**—The first annual meeting of the subscribers to the Bishop of Newcastle's Fund for Church Extension on Tyneside, was held on Monday. The Duke of Northumberland presided. The report of the committee stated that last year the Commissioners appointed to inquire into the wants of the district recommended the formation of 12 new parishes, with 11 new churches, and 14 additional mission-rooms. The amount required for building was 80,000*l*., and of this the sum of 39,461*l*. had been paid or promised.

### SCHOOL BUILDINGS.

**Todmorden.**—An infants' school-room and class-room have been added to the National Schools, Todmorden, and was opened on New Year's Day; they provide for 150 infants. The walls are faced with local sand-stone. The whole of the joiner work is of pitch-pine. The works have been carried out from the designs and under the superintendence of Mr. Jesse Horsfall, architect, of Todmorden, by the following contractors:—Atkinson, mason; Sutcliffe, joiner; Barnes, slater; Whittaker, plumber; Blacka, plasterer.



**Todmorden.**—New schools are to be erected for the Primitive Methodists at Knowlwood, Todmorden. The style is Romanesque (in keeping with the existing chapel adjoining), and will be faced with Yorkshire parpoints and Yorks dressings.

**Elgin.**—Plans for a new school have been approved by the Elgin School Board. The plans have been prepared by Messrs. A. & W. Reid, architects, of Elgin. The building will accommodate 350 scholars, and will cost about 4,500*l*.

**Padgate.**—A school erected near the Padgate Industrial School has been opened. The building will be used for school purposes on Sundays. It is built of Knutsford grey brick, relieved with red-pressed brick and terra-cotta, and will accommodate 100 children. The work has been carried out by Mr. Richard Beckett, contractor, of Hartford, from designs by Mr. William Owen, architect, Warrington.

**Sowerby Bridge.**—A Baptist school chapel has just been opened. It is built of stone, and accommodation for more than one hundred persons has been provided. The wood-work is of pitch-pine. There are two class-rooms, each 11 feet by 10 feet 6 inches, and kitchen with heating apparatus, &c. Mr. W. H. D. Horsfall, Halifax, is the architect.

**Glasgow.**—A Board school, erected at Townhead, has just been opened. It has been erected from the designs of Messrs. Baldie & Tennant, architects, Glasgow. A janitor's house and play-shed for infants have, by utilising the rapid fall of the ground eastwards, been got under the school. Spacious playgrounds are provided. The cost of the buildings is 14,564*l* 10*s*., which for 1,385 scholars gives 10*l* 10*s* 4*d*. per scholar, but the Board have provided the 10 square feet accommodation for 242 additional scholars, making in all accommodation at 8 and 10 square feet for 1,627, and in this view the cost is 8*l* 19*s* 0*¼d*. per scholar.

## ART SCHOOLS.

**Birkenhead.**—The prizes in this school were lately distributed by the Bishop of Chester. His lordship said that every work of art ought to subserve those three ideals—the good, the beautiful, and the true. If he had the choice of being a poet, a musician, or an artist, he should not hesitate which to choose. He was sure that the artist had a great advantage over the poet, and certainly he stood on an equality with the musician, and his works should conduce to good more than the other two. Art was not now peculiar to the rich, or people of æsthetical proclivities, but in almost every cottage they saw that the furniture, lamps, and chairs were made of a better pattern than heretofore, and some idea of beauty seemed to be making its way through the whole fabric of intelligent English society. Schools of art in England had not only raised the tone of refinement, and improved the pattern of things, but in some instances had been the means of leading to the foundation of great works. He believed that art, when it devoted its attention to the production of the beautiful, the good, and the true, was one of the greatest agencies by which modern society was raised and purified. The good, the beautiful, and the true must go together. He looked upon art as a discipline, in the cultivation of which patience and perseverance were required to produce accurate work, and this could not be attained without constant care and attention.

## GENERAL.

**A Slade Professor of Fine Art** will be elected at Cambridge on February 11, 1885. The office is held for three years, and the stipend consists of the dividends on 12,000*l*., invested in the funds.

**The Triennial Exhibition** of the Rotterdam Academy of Fine Arts will be opened on May 31, and closed on July 12.

**The Brussels Pavilion**, at the Antwerp International Exhibition, will contain 1,800 square metres.

**The Paisley Town Council** have agreed to offer free the site of a house in High Street to the directors of the School of Art, as a portion of the site required for the New School of Art, on condition that the Council be allowed a reasonable control in the management of the Institution, and failing the offer being accepted, to sell the site to the directors at the cost paid by the Council for the property in 1878.

**The Brander Library**, Huntley, was opened on Tuesday. It is the gift of Mr. William Brander, of the London Stock Exchange, to his native town.

**A Bath-Room Suite**, magnificently fitted, and intended for the ex-Khedive of Egypt, has been manufactured by Messrs. Conolly, Hampstead Road, N.W. The bath is the "Acme Spray," but has several additions to the ordinary bath of that name. The room will also contain a self-acting tip-up lavatory, of novel arrangement, which has been specially designed.

**A Pension** of 80*l* has been awarded to the granddaughters of Sir Henry Raeburn, the Scotch portrait painter.

**A Bust of Sir David Brewster** has been purchased by subscription for Jedburgh, his native town. It is the work of Mrs. D. O. Hill.

**Mr. Alan Danvers** has been knighted by the King of Portugal for his services in the installation and working of the telephone in Lisbon.

**M. Frédéric Baudry**, a member of the Academy of Inscriptions, and director of the Bibliothèque Mazarine, died lately in Paris at the age of sixty-six years.

**A Committee** has been formed in Paris for the relief of the sufferers by the earthquake in Spain. The Spanish Ambassador is president, and among the members are MM. Raymond de Madrazo and de Méliá, the painters.

**A Medal** has been designed by Mr. Poynter, R.A., and executed by Mr. Allan Wyon, which is intended to serve as a memorial of the founding and endowment of the Whitworth Scholarships by Sir Joseph Whitworth. The Lords of the Committee of Council on Education have authorised the issue of a copy of this medal to each of the scholars who have held scholarships and have gone through the prescribed course satisfactorily. Scholars, or the legal representatives of such as are dead, are requested to inform the Secretary of the Science and Art Department at South Kensington of the address to which their medals should be forwarded.

**Dr. Ferrers**, the Vice-Chancellor of Cambridge University, has stated that the exhibition of portraits extending to the year 1602, lent to the Cambridge Antiquarian Society by the liberality of the University and of the several colleges, has excited so much interest that it justified the hope that similar exhibitions embracing later works of art might be repeated in subsequent years.

**A New Reredos** has just been erected at St. Austin's Catholic Church, Stafford, from the designs of Messrs. Pugin & Pugin, of Westminster, by Mr. Wall, of Cheltenham.

**M. Victor Hugo** is said to have purchased a site near his present residence in Paris, on which he proposes to build a house from his own designs.

**The Subway** between the South Kensington Station and the Exhibition buildings has been commenced.

**Mr. Alfred Meeson**, architect of the first Alexandra Palace, died at his residence, No. 4 Harley Road, South Hampstead, on Monday last, in his seventy-sixth year.

**The Italian Church**, Hatton Garden, has just been lighted with the albo-carbon light by the Sanitary Engineering and Ventilation Co. of Westminster, who also recently applied the same system of lighting to the New Oratory, South Kensington, several picture galleries, &c.

**Mr. Banister Fletcher** has been appointed assessor in the competition for the new Baptist Chapel at Hendon.

**A Congress of Electricians** is proposed to be held in St. Petersburg, the city in which the earliest attempts were made to employ electricity as a motive power, for a vessel on the Neva. What is contemplated is the application of electricity to railway trains.

**An International Exhibition** will be held in Königsberg during the months of May to August. It is to comprise the following classes:—1, motors; 2, transmission appliances; 3, tools and implements for all branches of manufacture; 4, chemical and physical apparatus; 5, apparatus for technical education; 6, safety and protective appliances; 7, machinery and appliances for household purposes and for innkeepers; 8, agricultural implements and appliances. The exhibition takes place under the authority of the Industrial Central Union of the province of East Prussia.

**Messrs. Doulton** have been awarded the gold medal at the New Orleans Exhibition for their art pottery.

**Plans** for enlarging Melton Asylum have been approved of, and Messrs. Giles and Gough have been instructed to get tenders for the work.

**The Promoters** of the Manchester Ship Canal Bill have deposited the sum of 299,600*l*. in Consols with the Accountant-General in Chancery, as the Parliamentary deposit required by the Standing Orders. It is the largest sum ever deposited by promoters of any private bill.

**St. David's College**, Lampeter, is to be enlarged, and it is expected that the first stone of the new buildings will be laid in June.

**A Public Hall** is to be erected in Linlithgow by a joint-stock company. A site has been purchased having a frontage of 92 feet, and a depth of 100 feet.

**A Goods Station** is about to be erected on the North British Railway at Alloa by Messrs. Cousin, of that town. Plans are in preparation for a passenger station.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JANUARY 17, 1885.

## BUILDING MATERIALS.

THE Circular of Messrs. Churchill & Sims states that the quantities in loads of wood imported into the United Kingdom, since 1879, were as follows:—1879, 4,716,497; 1880, 6,310,031; 1881, 5,653,810; 1882, 6,320,863; 1883, 6,597,427; and 1884, 6,132,925; showing that the demand of the country has been smaller than in either 1883 or 1882. A still larger reduction is seen in the value of the importation, which amounted to £14,464,743 only in 1884, against £16,647,606 in 1883. The wood trade of the country could not have been prosperous with prices steadily tending downwards from the commencement to the end of the year. With reference more particularly to London, the trade has been of a very uneventful character, but less satisfactory than that of the two years immediately preceding it, for no great losses have been experienced either on stocks or by bad debts; on the other hand, such profits as have been made are meagre in the extreme, representing little more than bare commissions, or occasionally a larger percentage for dealers, who have had the advantage of buying at the public sales at the lowest rates on record. Speaking generally, it may be said that the extreme cheapness of the production, combined with the lowest freights ever known, has just enabled the trade to pay its way, and to find itself at the end of the year in no worse position than at the beginning, but without having regained any of the strength or credit lost in the three preceding years. The surest sign that it has borne a full share of the prevailing depression is that for the first time a great reduction in price has failed to increase the consumption.

ACCORDING to Messrs. Joseph Brindley & Co.'s Circular, the recent rise in prices shows that the long-continued depression in the slate trade appears at last to be approaching a close, the steady improvement in the export trade (which was anticipated in the last year's report) being the principal cause, and there is every prospect of this demand improving further. In the Bangor district the make has been about the average of previous years; but in the Festiniog district there has been a falling off of about 5,000 tons, while the heavy falls of rock in several of the quarries (in one case accompanied by serious loss of life) will cause the make for the coming year to be still further reduced, and so tend to keep up the present improved prices. The importation of foreign slates continues very small, and the reduction of the heavy protective duty in the United States will no doubt lead to a renewal of the export trade with that country, so that the prospects of the trade are better than they have been for many years.

MESSRS. FALLOWS & Co. say that the iron trade last year will be remembered as a period of prolonged and unrelieved depression, coupled with considerable contraction in the volume of business and a further fall in prices. The cause is not difficult to discover. For many years past the iron trade of the world has been subject to periods of expansion and contraction, mainly due to those sudden outbursts of railway exten-

sion so common in the United States, and it can only be hoped that the severe experience of the past may prevent a repetition of similar mistakes in the future.

## VENTILATION OF PUBLIC BUILDINGS.

MESSRS. ROBERT BOYLE & SON, Ventilating Engineers, 64 Holborn Viaduct, and Glasgow, are at present applying, and have applied, their Self-acting Air-pump Ventilators and system of ventilation to the new Tabernacle, Auckland, New Zealand, being built for the Rev. Mr. Spurgeon; St. Andrew's College and Asylum, Algoa Bay, Africa; Waddesdon Manor, residence of Baron de Rothschild; Aston Clinton, Tring, residence of Lady de Rothschild; Craig-y-Nos Castle, Wales, residence of Madame Adelina Patti; Walton House, Wilton, residence of Lord Pembroke; residence of the Duke of Cleveland, Bath; residence of Earl Grey, Howick; Euston Hall, Thetford, residence of the Duke of Grafton; New Post Office, Boston; Reform Club, Delph; Literary and Scientific Institute, Ebbw Vale, Mon.; St. Pancras Workhouse; County Police Station, West Hartlepool; New County Court, Nottingham; New Hospital, Douglas, Isle of Man.

## GAS AND ELECTRIC-LIGHT FITTINGS.

ONE of the new catalogues which have been prepared by Messrs. EVERED & CO., LIMITED, of Birmingham and London, suggests the importance which electricity has already reached. Brass fittings are now available to suit every purpose for which the light can be used, and thus we see simple pendants for single or double-burners in shops, brackets, wall-lights, and electroliers for five or more lights. They have been all designed so as to bring the burner into unity with the remainder of the work—a condition that is not always recognised. The catalogue of gas-fittings shows the richness and vigour that are associated with the name of Evered & Co. The gauntness that is too often found in metal-work is eschewed. With Renaissance surroundings those gaseliers would be especially appropriate; but Messrs. Evered produce work in every style, and carry out architects' designs with fidelity. In case some of our readers who are amateurs should apply to the firm for manufactures, it is as well to state that Evered & Co., Limited, only sell to those who sell again.

## MOSAIC AND PARQUET PAVEMENT.

MR. JOSEPH EBNER, of Clerkenwell Road, London, has lately laid a handsome marble mosaic pavement in the aisles and chancel of St. Mary's Church, Chipping Norton, with Irish fossil steps to the latter. Marble mosaic pavement has also been fitted in the porch of the residence of Mr. Panmure Gordon at Brighton, the design being unique and treated effectively in Chinese character; also in the hall at the Duke of Marlborough's, Queen Anne's Gate, S.W. Parquet floors have been laid at the new Stock Exchange,

and in the Middlesex Hospital extension the hydrofuge parquet floor, which is sound and fireproof. Mosaic pavements have been laid at Humphreys Hall, Knightsbridge; the elaborate oak doors there are also the work of Mr. Ebner. The use, for the first time we believe, of mosaic in connection with pavement lights is highly satisfactory.

## IRON GIRDERS.

MESSRS. MEASURES BROS. & Co. have again issued their Card Almanack, containing a view of the ruins of the building in Cheapside after the fire of 1881, when it was demonstrated that rolled iron joists, if of good quality, can withstand an amount of heat to which other materials succumb. The card is also interesting on another account. There is a view, taken from a photograph, of Messrs. Measures' extensive premises, showing their enormous stock of girders and rolled iron of all sections, weights, and lengths, and which is the more remarkable as being found in London. The supply is sufficient for the demands of a larger area than that of the Great Metropolis. It is unnecessary to enlarge on the advantage to builders of having such a stock as is found in Southwark, for by means of it there need be none of those delays which occur too often when orders are given to firms who are dependent on foreign supplies. So large a quantity of English joists is satisfactory evidence that the rolling mills in the Midlands have not yet been superseded.

## IRON CASEMENTS.

THE unpretending trade list of Messrs. Burt & Potts runs the risk of being overlooked amidst the showy catalogues which arrive in every architect's office. But it contains information that is always useful, for it is needless to say that the iron framing which this firm has made a speciality is always in request, and it is well to have particulars at hand. Messrs. Burt & Potts' casements have the advantage of being strong without being heavy. They can be adapted to suit buildings large and small, in all styles of architecture, and by the aid of an ingenious system of fastening they can be made as secure as if casement and frame were in one piece.

## WOOD-BLOCK FLOORING.

MR. ROGER L. LOWE, of Farnworth, near Bolton, has just completed laying his improved wood-block flooring at the following buildings:—Lydiard House, near Swindon; corridors and council chamber, at Hyde Town Hall, Messrs. J. W. & F. R. Beaumont, architects; Underwood, Buxton, Messrs. Mills & Murgatroyd, architects; Hanley Town Hall, Mr. J. Lobley, surveyor; Girls' High School at Exeter, Messrs. Hayward & Son, architects; New Mission Hall, Swindon, Mr. O. Baker, architect; Armathwaite Hall, Cockermouth; Bull Hotel, Wakefield, Mr. W. W. Watson, architect; dispensing-room, Beckett's Hospital, Barnsley, Messrs. Dixon &



Moxon, architects; Turner's Memorial House, Liverpool, Mr. A. Waterhouse, architect, London; St. Germans Church, Cardiff; Walford Schools, Walford, Herefordshire; Restaurant, Hatchett's Hotel, Piccadilly, W.; Parish Church, Llanrwst, Messrs. Paley & Austin, architects; Memorial Chapel, Nantwich, Mr. T. Bowers, architect; Hope Church, near Mold; dining and drawing-rooms, for Messrs. Weeks, builders, Whitechurch, Hants; Baptist New Schools, Nantwich, Mr. T. Bowers, architect; St. Elvan's Church, Aberdare, Mr. T. L. Edwards, architect; aisles of Lindfield Church, Sussex, Mr. Somers Clarke, London; 20 Bolton Street, Piccadilly, London; Old Alhambra, Nottingham, Messrs. Trumann & Pratt, architects; hall at Weybridge, for Messrs. Williams & Gale, architects; dining-hall, Woolwich Arsenal, for Lieutenant-Colonel H. D. Crozier, R.E.; Werrington Church, near Peterborough, Mr. J. E. Traylen, architect; new schools, Swindon, Wilts, Mr. W. H. Read, architect; waiting-room, Leamington Station, Mr. H. Woodhouse, C.E.; fixing parquet border (by Trollope, London) in Lowe's patent composition on fire-proof floors in magistrates' room, Sessions House Liverpool, Messrs. F. & G. Holmes, architects.

## AUCTION SUMMARY.

For the Week ending January 24.

MONDAY, 19th:—

Mr. Henry Benningfield.—Freehold Building Land, Enfield.

Messrs. Inman &amp; Co.—Freehold Land, with Buildings.

TUESDAY, 20th:—

Messrs. Horne, Eversfield &amp; Co.—Marble Chimney-pieces, &amp;c.

WEDNESDAY, 21st:—

Mr. Bradshaw Brown.—Kilns, Offices, Cart-house, and Vacant Land, Mile End.

Messrs. Henry Oughton &amp; Son.—Builders' Yards, Workshops, Stabling, and Offices, South Kensington.

FRIDAY, 23rd:—

Mr. Robert Reid.—Freehold Building Site, Paternoster Row.

Mr. Robert Reid.—Freehold Building Land, Hendon and Kilburn.

## COMPETITIONS OPEN.

CHELSEA.—Feb. 25.—Plans are invited for Additions to the Vestry Hall. Premiums of 100, 50, and 30 guineas. Mr. J. Elsdell Salway, Clerk of the Vestry, King's Road, Chelsea.

CROYDON.—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100%, 30%, and 25% for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

LONGTON.—Feb. 20.—The Longton School Board are about to erect two sets of schools at Normacott and Florence, each to accommodate 700 scholars (220 boys, 220 girls, and 260 infants), and invite architects in the Potteries and Newcastle to send in designs and estimates. Mr. Geo. C. Kent, Clerk to the School Board, Longton.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.

## CONTRACTS OPEN.

ABERDEEN.—Jan. 20.—For Building Farmstead at Northfield, Warthill. Mr. C. Craig, Warthill, Aberdeen.

ABERYSTWITH.—Jan. 31.—For Building House at Brongog. Mr. J. Middleton, Architect, Cheltenham.

ALNWICK.—Jan. 22.—For Building Bakery and Flour Warehouse. Messrs. T. Dixon & Son, Bondgate Street, Alnwick.

ACOMB.—Jan. 17.—For Construction of Road. Mr. G. J. Monson, 13 New Street, York.

ASHTON-ON-MERSEY.—Jan. 27.—For Leveling, Paving, Metalling, and Channelling Streets. Mr. A. McKenzie, Surveyor, Broomfield Road, Hale, near Altrincham.

BALTINGLASS.—Jan. 27.—For Building Boundary Fence round the Killranelagh Graveyard. Mr. J. Ralph Dagg, Clerk to the Burial Board, Baltinglass.

BAMBER BRIDGE.—Jan. 26.—For Constructing Subway under Railway. The Engineer's Office, Hunt's Bank, Manchester.

BEDFORD.—Feb. 24.—For Plans and Specifications and Execution of Works in connection with Sewage Pumping at Outfall Works. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.

BETHNAL GREEN.—Feb. 5.—For Construction of Brick Sewers in Queen's Road, Great Cambridge Street, &c., to Bethnal Green Road. The Engineer, Metropolitan Board of Works, Spring Gardens, S.W.

BIRKENHEAD.—Jan. 23.—For Construction and Erection of Six Purifiers, each 30 feet by 30 feet, with Girders, Columns, and Iron Roofing, 80 feet span, at Gasworks, Thomas Street. Mr. T. O. Paterson, Engineer, Gasworks, Birkenhead.

BIRKENHEAD.—Jan. 23.—For Retorts, Fire Bricks, and Fireclay during the current year. Mr. Paterson, Gas Engineer, Gasworks, Birkenhead.

BIRSTALL.—For Building House and Shop, White Swan Estate. Mr. Walter Hanstock, Architect, Branch Road, Batley.

BLACKROCK.—Jan. 31.—For Construction of Disinfecting Hot-air Chamber. Mr. T. M. Porter, Secretary to the Commissioners, Town Hall, Blackrock, Dublin.

BRADFORD.—Jan. 20.—For Building Residence, Barker End Road. Mr. J. Ledingham, Architect, 1 New Ivegate, Bradford.

## R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,  
INVENTOR and PATENTEE of the  
SAFETY WINDOW WITH REVERSIBLE SASHES

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## INEXPENSIVE &amp; PERPETUAL CLEANLINESS

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SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
and 16 Diplomas of Merit.

The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—

Barnstable . . . . .  
Belfast and 10 miles round . . . . .  
Bournemouth and 10 miles round . . . . .  
Brighton and 8 miles round . . . . .  
Bristol and 20 miles round, and  
Gloucestershire, Somerset, Dorset,  
Wiltshire, Mon., Glamorganshire  
Dublin and 20 miles round . . . . .  
Dundee and 30 miles round . . . . .  
Edinburgh . . . . .  
Exeter and 20 miles round . . . . .  
Glasgow and 30 miles round . . . . .  
Gloucester and Cheltenham . . . . .

Hancock, Pilton Street.  
W. J. Watson, Royal Avenue, Belfast.  
H. W. Jenkins & Son, Builders.  
Cheesman & Co., Kensington Street.  
Brock & Bruce, Albert Road, St. Philip's.  
J. & W. Beckett, 28 South King Street.  
Sewart Robertson, 34 Bank Street.  
W. R. Commings, 45 Longbrook Street.  
Baird, Thompson & Co., 24 Bath Street.  
The Sanitary and Economic Association.

Hastings . . . . .  
Hereford and 5 miles round . . . . .  
Ilfracombe . . . . .  
Leeds and 5 miles round . . . . .  
Liverpool . . . . .  
Ludlow and Leominster . . . . .  
Newton Abbott and 10 miles round . . . . .  
Nottingham and 15 miles round . . . . .  
Reading and 5 miles round . . . . .  
Southampton and 7 miles round . . . . .  
Sunderland and 10 miles round . . . . .  
Torquay and 5 miles round . . . . .

Taylor Bros., Builders.  
C. Lawrence, 41 Portland Street.  
W. Jones, 4 Osborne Road.  
John Wm. Lewes, 65 Albion Street.  
Evan Griffiths & George Finning, Sefton Works,  
Miles Street.  
J. Grosvenor, Ludlow.  
Parker Bros., Courtney Street.  
Henry Vickers, Welford Road.  
Driver & Co., St. Mary Saw Mills, Southampton.  
C. & W. Watson, Union Street.





**BRISTOL.**—Jan. 19.—For Rebuilding Side Front of No. 1 Paul Street, Kingsdown. Mr. J. Thomas, City Surveyor, 13 Prince Street, Bristol.

**BURY.**—Jan. 27.—For Construction (Labour only) of Brick Sewer, &c., Bridge Street. Mr. J. Cartwright, C.E., Borough Surveyor, Bury.

**CLAINES.**—Jan. 21.—For Supplying and Laying Cast-iron Pipes and Water Mains, Fixing Valves, Hydrants, &c. Mr. A. H. Parker, Surveyor to the Claines Local Board, 5 Foregate Street, Worcester.

**CLAPTON.**—Jan. 22.—For Building Mission-room to Christ Church, Kenninghall Road. Mr. Francis T. Dollman, Architect, 63 Gloucester Crescent, Regent's Park, N.W.

**CLECKHEATON.**—Jan. 26.—For Constructing Roads, Retaining Walls and Bridge, carrying Whitelife Office over the Railway. The Engineer's Office, Hunt's Bank, Manchester.

**COBHAM.**—Jan. 19.—For Building Cemetery Chapels, Boundary Fences, Gates, &c. Mr. G. H. Birch, Devereux Chambers, Devereux Court, W.C. Mr. T. W. Goodman, Surveyor, 9 Buckingham Street, Strand.

**COCKERMOUTH.**—Jan. 26.—For Construction of Brick Gasholder Tank. Mr. John Pattinson, Secretary, Gasworks, Cockermouth.

**CREWE.**—Feb. 6.—For Laying Cast-iron Water Mains with Valves, Hydrants, Fittings, &c., in connection with the Water Supply. Mr. J. Aldersey Davenport, Surveyor, 152 Hospital Street, Nantwich.

**DANISH STATE RAILWAYS.**—Feb. 4.—For Supply and Delivery of 70 tons of Tires for Locomotive and Wagon Wheels. Otto Busse, Chief Mechanical Engineer, Aarhus, in Denmark.

**DARLINGTON.**—Feb. 18.—For the Works in Building Central Passenger Station, including Platforms, Roofing, &c. Mr. William Bell, Architect to the North-Eastern Railway Company, York.

**DERBY.**—Jan. 27.—For Construction of Tank, and Manholes, and Laying Main Drain from the

present Outfall to the Sewage Farm, Underdraining Farm, &c., at Melbourne. Mr. J. Edwd. Lingard, C.E., Rodney Chambers, Derby.

**DRIFFIELD.**—Jan. 24.—For Supply of Engine, Boilers, and Deep Well Pumps. Mr. Thomas H. Trigg, Secretary to the Water Company, Driffield.

**EAST RETFORD.**—Jan. 23.—For Flagging and Blue Brick Paving Works in Bridge Gate, Moorgate and Grove Street. Mr. J. D. Kennedy, Borough Surveyor, East Retford.

**FINCHLEY.**—Jan. 19.—For Supply of Guernsey and other Hand-broken Granite (2,300 tons). Mr. G. W. Brunell, Surveyor to the Local Board, Church End, Finchley.

**GOOLE.**—Jan. 19.—For Metalling, Levelling, Paving, Flagging, Channelling, and Draining certain Streets. Mr. E. C. B. Tudor, C.E., Local Board Office, Market Hall Chambers, Goole.

**GORTON.**—Jan. 28.—For Paving and Completing Edith Street. Mr. R. T. Holland, Clerk to the Local Board, Hyde Road, Gorton.

**HARDINGSTONE.**—Jan. 19.—For Construction of Sewers, Tanks, Buildings, and other Works in Connection, St. James's End. Messrs. Ingman & Sons, Surveyors, Hazlewood Road, Northampton.

**HUNSLT.**—Jan. 20.—For Building Seven Houses, Ladypit Lane. Messrs. Richard Towse & Son, Architects, Dewsbury Road, Leeds.

**HYTHE.**—Feb. 2.—For Building Cloak-rooms, and sundry Repairs to Board School. Mr. D. Davy, Architect, Cadland, Southampton.

**KENDAL.**—Jan. 27.—For Alterations and Additions to Arm Street Mills. Mr. Stephen Shaw, Architect, Kendal.

**LEEDS.**—Jan. 23.—For Building a Three-storey Warehouse, Swinegate. Mr. Joseph J. Mosley, 6 Wormald Row, Albion Street, Leeds.

**LEEDS.**—Jan. 21.—For Building Extensive Warehouse Premises for Messrs. Goodall, Backhouse & Co. Mr. Thomas Winn, Architect, Victoria Buildings, 18 Park Lane, Leeds.

**LEICESTER.**—Jan. 28.—For putting into Repair Roadway, Kerbs, and Channels, and for Construction of Sewer with Manhole, Flushing Shaft, &c., Melton Street, Belgrave. Mr. A. T. Draper, Surveyor to the Belgrave Local Board, 22 Friar Lane, Leicester.

**LIVERSEDGE.**—Jan. 21.—For Building Blacksmith's Shop at the Yorkshire Machine Tool Works. Messrs. Pitt Bros., Liversedge.

**LLANDUDNO.**—Jan. 27.—For Gasholder and Tank complete (Designs and Tenders), available capacity 80,000 cubic feet. Mr. T. T. Marks, C.E., Engineer and Clerk to the Commissioners, Commissioners' Office, Llandudno.

**LOCH LEAVEN, N.B.**—Jan. 20.—For the Supply and Erection of a Concrete and Iron Pier at Onich Bay, Loch Leaven. Mr. G. Woulfe Brennan, C.E., Argyll Square, Oban.

**LONDON.**—Jan. 20.—For Supply of Steel Rails, Fishplates, and Fastenings, Iron Sleepers, &c., Iron Roofing, &c., for South Indian Railway Company. Mr. H. W. Notman, Managing Director, 65 Gracechurch Street, E.C.

**LONDON.**—Jan. 21.—For Supplying Wrought-iron Girder Bridges for the Southern Mahratta Railway Company. Mr. E. Z. Thornton, Secretary, 31 Lombard Street, E.C.

**LONDON.**—Feb. 3.—For Construction and Supply of Boilers for the Steamer *Albert Victor*, for the Metropolitan Asylums Board. Mr. J. Wallace Peggs, C.E., 21 Queen Anne's Gate, Westminster.

**LONG EATON.**—Jan. 21.—For Building House, Two Shops, and Offices, High Street; Three Shops, Odd Fellows' Hall, &c., Market Place; and Ladies Seminary and Mistress' House, Bridge Street. Mr. John Sheldon, Architect, Market Place, Long Eaton.

**LONGRIDGE.**—Jan. 20.—For Deepening Alston Reservoir. The Borough Engineer, 16 Church Street, Preston.

**LUDLOW.**—Jan. 31.—For Building Master's House and additional Schoolroom to Gravel Hill School. Plans by the Architect, Mr. J. Farmer, at the Rectory, Ludlow.

# RENDLE'S "ACME" GLAZING

(REGD)

Patentees:—**W. E. RENDLE & CO.,**  
3 WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON.

## SALES BY AUCTION.

**FOY, MORGAN & CO.** beg to announce that their next PUBLIC AUCTION will take place on

FRIDAY, FEBRUARY 6, 1885,

at the **BALTIC SALE-ROOM**, Threadneedle Street, E.C., when they will offer their usual assortment of **DEALS, BATTENS, BOARDS, TIMBER, &c.**

Catalogues will be issued in due time.  
**FOY, MORGAN & CO.** { Wood Brokers, 108 Bishopsgate Street Within, E.C.

**UPPER THAMES STREET, E.C.**—To Builders, Marble Masons, and Others.—Absolute Sale of Marble Chimney-pieces, &c. (in consequence of the Premises having to be given up at Lady Day).

**MESSRS. HORNE, SON & EVERSFIELD** are instructed by Mr. George Mitchell to **SELL** by AUCTION, on the Premises, No. 148 Upper Thames Street, E.C., on Tuesday, January 20, and following day, at Twelve for One o'clock precisely each day, the whole of the valuable STOCK of very handsome **CHIMNEYPIECES** and **FENDERS** in Statuary, Sicilian, Blanc P. Sienna, Brun Brecht, Italian Grotto, Bardilla, Black, Rouge Royal, St. Ann's, Vein, and other Marbles, in every variety of designs suitable for builders of every class of house; a large selection of kitchen ranges and tile grates by the best makers; and a well-assorted stock of 3-inch and 1-inch tiles, &c.—May be viewed one week prior to Sale, and catalogue had on the Premises; also at No. 166 Brompton Road, S.W.; and of Horne, Son & Eversfield, 17 Great George Street, S.W., and 80 Fore Street, E.C.

To Builders and Others.—Hendon.—Valuable Freehold Land with buildings thereon, comprising two cottages, barn, and stable, producing, when all are let, £38 4s. per annum, less some small outgoings. Well situated in the above beautiful locality, in main road at the corner of Colin Deep Lane, the Burroughs and near station.

**INMAN & CO.** will OFFER by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Monday, January 19, at One, the above valuable PROPERTY.—Particulars and conditions of sale at the Mart; of Messrs. Smith, Stenning & Croft, Solicitors, 70A Aldermanbury; and at the Auction Offices, 126 Maiden Lane.

**BERMONDSEY WALL POTTERIES**, fitted with Kilns, Plant, and Machinery, with possession, together with the Goodwill of the old-established Business for the Manufacture of Stoneware Drainpipes, Chimney-pots, &c.

**MESSRS. FULLER, HORSEY, SONS & CASSELL**, are instructed by the Executors of the late Mr. Henry Millichamp to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on Wednesday, January 21, 1885, at One precisely, in One Lot, the valuable PREMISES, known as the Bermondsey Wall Potteries, situate No. 58 Bermondsey Wall, occupying an area of about 21,500 square feet, part freehold and part leasehold. The freehold portion has a frontage to Salisbury Street, and comprises a substantial brick-built factory of three floors, with kiln, covered store adjoining, and large yard. The remainder of the premises consists of a spacious factory, with two kilns, and two pairs edge-runners, steam-engine and boiler-house, with horizontal steam-engine and boiler, chimney-shaft, stabling, dwelling-house, and yard, held for an unexpired term of about forty-one years, at a rental of £240 per annum; also a factory adjoining, with two kilns and dwelling-house, held for an unexpired term of about two years, at a rental of £40 per annum. May be viewed by orders, to be obtained at the Auctioneers' Offices, and particulars had of A. Calkin Lewis, Esq., Solicitor, 7 Furnival's Inn, E.C.; Samuel Dyer Nix, Esq., Chartered Accountant, 3 King Street, Cheapside, E.C.; at the Mart and of Messrs. Fuller, Horsey, Sons, & Cassell, No. 11 Billiter Square, E.C.

Leytonstone, close to the Station on the Great Eastern Railway.

**MR. GEORGE B. SMALLPEICE** has received instructions to **SELL** by AUCTION, at the Mart, Tokenhouse Yard, Bank of England, on Thursday, January 29, at Two precisely, **FIFTEEN PLOTS** of **FREEHOLD BUILDING LAND**, situate in the Fairlop, Filbeck, and Bulwer Roads, with frontage amounting to 550 feet. Also the Freehold Residence in Fairlop Road, known as Albany Villa. The land is exceedingly well placed, within 30 minutes' ride of the Metropolitan, to which there is a constant and regular service of trains; it is well adapted for the erection of villas of a superior description, and which, from their easy access, would readily command a desirable class of tenants. The residence may be viewed with the permission of the occupier.—Particulars may be obtained of C. B. Cooper, Esq., Solicitor, 40 Bedford Row, W.C.; at the Mart; and of George B. Smallpeice, Surveyor and Auctioneer, 9 and 10 Tokenhouse Yard, Lothbury, E.C.; and Guildford.

**BEXHILL-ON-SEA.**

Between St. Leonards and Eastbourne, with Railway Station on the Estate.

**MESSRS. E. & H. LUMLEY** beg to announce that the extensive improvement works which have been carried on at a cost of about £50,000 are now complete, and invite the attention of builders, contractors, and capitalists to the valuable sea frontage now ripe for buildings. Leases will be granted on easy terms, and every facility afforded for developing this very promising seaside town.

Plans and particulars may be obtained of Lumleys, agents to the freeholder, the Right Hon. Earl DE LA WARR, at 21 St. James's Street, Piccadilly, S.W.

**VAUXHALL.**

On the Albert Embankment, in close proximity to the river. A Freehold Building site of about 12,500 square feet, with extensive frontages to the road and pathway of the Embankment, close to Messrs. Doulton's Potteries and other large factories, eminently suitable for the erection of a warehouse, Public Hall, or business premises requiring space and a prominent and commanding position unequalled in the district.

**MESSRS. FAREBROTHER, ELLIS, CLARK & CO.** are instructed to offer for **SALE** by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Thursday, February 12, 1885, at 2 o'clock, the above valuable **FREEHOLD BUILDING SITE**.

For particulars apply to H. E. Brown, Esq., Solicitor, 22 Great George Street, Westminster, S.W.; or to Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, and 18 Old Broad Street, E.C.

Sale of Plant and Surplus Stock.—Terra-cotta Works, Mapli Street, Mile End Road, E.

**MR. BRADSHAW BROWN** will **SELL** by PUBLIC AUCTION, on the Premises, as above, on Wednesday, January 21, 1885, at Eleven for Twelve o'clock, a 6 H. P. **PORTABLE ENGINE**, shafting, wash, pug, and mortar mills, with edge runners, garden-tile press, quantity of spandril steps, figures and artistic statuettes, fountains, Greek amphora and garden vases, quantity of geometrical and garden tiles, moulds, casts for studio purposes, and other items.—Auctioneer's Offices, 59 Fenchurch Street, E.C., and Estate Offices, Millwall, E.



**MAUCHLINE.**—Jan. 24.—For Cutting Bars-kimming Brae and Building Retaining Walls in connection. Mr. James M. Pearson, C.E., Kilmarnock.

**MIDDLESBROUGH.**—Jan. 21.—For Building Engine House, &c., for Hydraulic Machinery at Docks. Mr. William Bell, Architect, Railway Offices, Northgate, Darlington.

**MIDDLESBROUGH.**—Jan. 24.—For Cast and Wrought Ironwork for Erection of Nine Through Beds of Retorts. Mr. E. D. Latham, Gas Offices, Middlesbrough.

**MIDGLEY.**—Jan. 28.—For Building Shed (59 yards by 34 yards), together with Store-room, Subway, and Appurtenances, at Oats Royd. Mr. T. Lister Patchett, Architect, George Street Chambers, Halifax.

**MILTON.**—Feb. 10.—For Repewing and Renovating Interior Walls of Parish Church. Rev. T. B. Robinson, Milton Rectory, Lymington.

**NEWARK.**—Jan. 26.—For Building Seven Dwelling-houses. Mr. George Sheppard, Architect, 9 Kirkgate, Newark.

**NEWCASTLE-ON-TYNE.**—Jan. 17.—For Building Baptist Chapel, Schools, Mission-hall, &c., Westgate Road. Mr. J. Cubitt, Architect, 2 Broad Street Buildings, London, E.C. Names by the 17th.

**NEWPORT.**—Jan. 26.—For Construction of Dry Dock for the Slipway, Dry Dock, and Engineering Company. Mr. T. Rees, C.E., Corn Exchange, Newport, Mon.

**NORMANTON.**—Jan. 23.—For Excavating and Laying 1,000 yards of 18-inch, 1,200 yards of 15-inch, 800 yards of 12-inch Earthenware Socket Pipes, and 270 yards of 21-inch Conduit Sewer, with Manholes, Lamp-holes, Junctions, and Ventilators, &c., and other works: also for 1,000 yards of 18-inch and 300 yards of 15-inch Earthenware Socket Pipes, taking up and relaying existing Sewer with Manholes, &c. Mr. Thomas Reid, C.E., The Grove, Normanton, Yorks.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Construction of Works in connection with Widening Main Line from Manors Station to Heaton Junction (1 mile 40 chains). Plans and Specification to be seen by Feb. 2 next, at the Engineer-in-Chief's Office, Newcastle-on-Tyne.

**OLDHAM.**—For Building Dwelling-house in Crossbank Street. Messrs. Potts, Pickup & Dixon, Architects, Clegg Street, Oldham.

**PENYCLAWDD.**—Feb. 12. For Restoring St. Martin's Church. Rev. J. P. David, Penyclawdd Rectory, near Monmouth.

**PETERBOROUGH.**—Jan. 22.—For Alterations and Additions to Cottage Hospital. Mr. J. W. Walshaw, Borough Surveyor, Guildhall, Peterborough.

**PONTEFRAC.**—Jan. 27.—For Supply of 1,300 yards of 2-inch best Cast-iron Turned and Bored Socket Water-mains, coated with Dr. Smith's composition; also of Copper (Street) Lamps, and best Cast-iron Posts, painted with Two Coats of "Calley's" Torbay Paint. Mr. James Heseltine, Borough Surveyor, Town Hall, Pontefract.

**PONTEFRAC.**—Jan. 30.—For Supply of 300 yards of 12 inches by 4 inches York Stone Edging. Mr. James Heseltine, Borough Surveyor, Town Hall, Pontefract.

**PORTO RICO.**—March 22.—For Supply of Dredging Apparatus. The Spanish Consulate-General, 21 Billiter Street, E.C.

**RAINFORD.**—Jan. 17.—For Supplying 100 tons of Second Setts, 5 or 6 inches wide by 7 or 8 inches deep. Mr. B. Smith, Clerk to the Local Board, Rainford.

**RAMSGATE.**—Jan. 23.—For Enlarging Post Office. Mr. A. B. Mitford, Secretary H.M. Office of Works, 12 Whitehall Place, S.W.

**ROCHDALE.**—For Building Cotton Mill for the Crawford Spinning Company. Messrs. Potts, Pickup & Dixon, Architects, 1 Princess Street, Manchester, and Clegg Street, Oldham.

**ROCHDALE.**—For Supply of Steam-Engines for Mill. The Secretary, Crawford Spinning Company, Rochdale.

**ROSSCABERY.**—Jan. 17.—For Construction of Works for Water Supply to Town. Mr. W. H. Spiller, Clerk to the Union, Clonakilty.

**RUMWORTH.**—Jan. 19.—For Construction of Pipe Sewers at Deane and other parts of Townships of Rumworth and Heaton. Mr. Atherton, Engineer, 24 Mawdsley Street, Bolton.

**RUNCORN.**—Jan. 19.—For Sewering part of Township of Stretton (500 yards of Main Sewers, of 9 and 6 inches diameter), also for the Construction of Manholes, Lamp-holes, and small Settling Tank. Messrs. Linaker & Davies, Frodsham.

**SALTLEY.**—Jan. 20.—For Execution of Works in Gate Street and Brick-paving Foot-paths. Mr. Digby Jenkins, Surveyor to the Local Board, Park Road, Saltley.

**STONE.**—June 17.—For Improvement Works, Victor Street West. Mr. H. Fishwick, Clerk to the Local Board, Stone.

**SWANSEA.**—Jan. 23.—For Additions to Vicarage, Walter Road, for Rev. Canon Smith. Messrs. James, Seward & Thomas, Architects, Castle Buildings, Swansea.

**THORNEY, WELFORD.**—Jan. 30.—For Repairs to Red Lion Inn, for Messrs. Phipps & Co. Messrs. Phipps & Co., Gold Street, Northampton.

**WALLSEND.**—Jan. 19.—For Building St. Luke's Church. Messrs. Oliver & Leeson, Architects, Bank Chambers, Newcastle-on-Tyne. Names to be sent by the 19th.

**WATFORD.**—Jan. 22.—For Making and Erecting a Compound Beam Engine, with Bucket and Plunger-pump complete, at the Waterworks. Mr. C. C. Lovejoy, Surveyor, Carey Place, Watford. Messrs. Edward Easton & Co., Engineers, 11 Delahay Street, Westminster, S.W.

**WIGAN.**—For Building Block of (ashlar) Business Premises, Shop, Offices, and Restaurant. Messrs. Isitt & Verity, Architects, Wallgate, Wigan.

## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"Sir,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it. Yours, &c.

"To Mr. Grundy." "Yours, &c.

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

to JOHN GRUNDY, 30 Duncan Terrace, City Road, London.  
Works—TYLDESLEY, near MANCHESTER.



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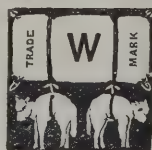
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The Steel Cut Nails are far superior in quality and more uniform in size than any wrought or hand-made Nails yet produced, and being lighter in weight than ordinary Iron Cut Nails and free from rust, they are found cheaper in actual use than common Iron Cut Nails at 1s. 6d. per cwt. less.  
These Steel Cut Nails are specially suited for Builders, Joiners, Coopers, Packing-Case Makers, &c., and a single trial is sufficient to convince any one of their superior quality and cheapness.

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DESIGNS PREPARED AND ESTIMATES GIVEN.



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| Robinson, Altofts . . .  | 83 12 0  |
| Oxer & Bramham, Altofts . . .  | 80 10 0  |
| Gibson, Normanton . . .  | 66 5 0   |
| Nettleton, Stanley . . .   | 65 0 0   |
| Holmes, Stanley . . .  | 62 10 0  |
| DENISON, Normanton (accepted) . . .  | 60 0 0   |

**ASPATRIA.**

|  |  |
|--|--|
| For Erection of Buildings for the Aspatria Industrial Co-operative Society. Mr. THOMAS TREMBLE, Architect. |  |
|--|--|

**Accepted Tenders.**

|                                    |          |
|------------------------------------|----------|
| Graves, Aspatria, builder . . .    | £208 0 0 |
| Moon, Wigton, joiner . . .         | 97 15 0  |
| Mandle, Maryport, slating . . .    | 31 0 0   |
| Bell, Aspatria, painter . . .      | 10 10 0  |
| Brodie, Maryport, plastering . . . | 6 10 0   |

**BARMOUTH.**

|   |             |
|---|-------------|
| For Erection of a House and Shop at Barmouth for Mrs. Edwards. Mr. THOMAS ROBERTS, Assoc. M. Inst. C.E., Architect. |             |
| Jones, Crickieth . . .  | £1,727 11 0 |
| Hughes, Portmadoc . . .   | 1,660 0 0   |
| Griffiths, Crickieth . . .  | 1,570 0 0   |
| Edwards, Barmouth . . .   | 1,557 0 0   |
| Jones, Portmadoc . . .  | 1,553 0 0   |
| Thomas & Parry, Llanbedr . . .  | 1,512 0 0   |
| Davies, Barmouth . . .  | 1,469 0 0   |
| Evans, Harlech . . .  | 1,445 0 0   |
| Jones & Edwards, Barmouth . . .   | 1,441 11 0  |
| Roberts & Williams, Talsarnau and Harlech . . .   | 1,420 0 0   |
| Owens, Barmouth . . .   | 1,384 0 0   |
| Architect's estimate . . .  | 1,449 0 0   |

**BIRKENHEAD.**

|  |             |
|--|-------------|
| For Making Road from Argyle Street South, to Queen Street, Birkenhead. Mr. T. C. THORBURN, C.E., Borough Surveyor. |             |
| Anwell, Liverpool . . .  | £3,179 4 6  |
| Maddocks & Co., Birkenhead . . .   | 3,067 4 8   |
| Jones, Birkenhead . . .  | 2,853 17 10 |
| Speight, Liverpool . . .   | 2,790 0 0   |
| Stirling & Swann . . .   | 2,770 0 0   |
| Chadwick & Son, Liverpool . . .  | 2,664 0 0   |
| Fawkes Bros., Southport . . .  | 2,649 5 9   |
| Davies, Tranmere . . .   | 2,585 0 0   |
| W. & T. Davies, Birkenhead . . .   | 2,398 17 5  |
| Heaps, Birkenhead . . .  | 2,322 17 3  |
| RIDDELL, Tranmere (accepted) . . .   | 2,352 4 7   |

|   |          |
|---|----------|
| For Building Ward at the Fever Hospital, Birkenhead. Mr. THOS. C. THORBURN, C.E., Architect. Quantities by the Architect. |          |
| Beddard . . .   | £782 0 0 |
| Richards . . .  | 750 11 3 |
| Bleakley & Son . . .  | 745 0 0  |
| Richie . . .  | 715 19 6 |
| Munnerley . . .   | 655 10 0 |
| Forde . . .   | 634 17 8 |
| Legge, Sons & Co. . .   | 618 0 0  |
| Snape . . .   | 595 0 0  |

**BRADFORD.**

|   |             |
|---|-------------|
| For Laying Out Cemetery at Bowling, Bradford. |             |
| KERSHAW (accepted) . . .                      | £5,067 10 0 |

**BRADFORD MOOR.**

|   |  |
|---|--|
| For Building Four Houses, Bradford Moor. Mr. WILLIAM RYCROFT, Architect, Bradford. Quantities by the Architect. |  |
| Wilkinson, Bradford, mason and joiner work.   |  |
| Booth & Son, Dudley Hill, plumber work.   |  |
| Storey, Laisterdyke, plasterer work.  |  |
| Thornton, Ecclehill, slater work.   |  |
| Total amount, £637.   |  |

**Accepted Tenders.****BURTON-ON-TRENT.**

|  |          |
|--|----------|
| For Works in Culverting Shobnall Brook, Burton-on-Trent. |          |
| HODGES (accepted) . . .                                  | £234 0 0 |
| Four tenders received.                                   |          |

**FAVERSHAM.**

|  |         |
|--|---------|
| For Painting and Repairing Guildhall, Faversham. |         |
| Eston . . .                                      | £55 0 0 |
| Hedgecock . . .                                  | 52 10 0 |
| Ware & Son . . .                                 | 48 0 0  |
| Ratcliff Bros. . .                               | 46 0 0  |
| Griggs . . .                                     | 38 15 0 |
| Fuller . . .                                     | 33 0 0  |
| Payn . . .                                       | 32 10 0 |
| Wildash . . .                                    | 27 18 0 |
| Dawson . . .                                     | 26 5 0  |
| BAKER (accepted) . . .                           | 26 0 0  |

**GLOSSOP.**

|   |          |
|---|----------|
| For Boundary Walling for the Brookfield Congregational Church, Glossop. Mr. J. H. BURTON, Architect, Ashton-under-Lyne. |          |
| Davison & Carr, Manchester . . .  | £178 0 0 |
| Birtwistle, Glossop . . .   | 163 6 4  |
| Dewsnop, Glossop . . .  | 122 10 0 |
| CHARLESWORTH, Glossop (accepted) . . .  | 115 0 0  |

**HALIFAX.**

|   |            |
|---|------------|
| For Taking-down and Removing the Embankments and Walls of the Hanson Lane Lower Reservoir, &c., for the Markets Committee. Mr. E. R. S. ESCOTT, C.E., Borough Engineer, Town Hall, Halifax. |            |
| Dawson, Warley . . .  | £2,537 0 0 |
| Wharmby, Elton . . .  | 1,848 0 0  |
| Dewhirst, Halifax . . .   | 1,741 0 0  |
| Slinger . . .   | 1,423 0 0  |
| Charnock & Sons, Halifax . . .  | 1,323 0 0  |
| Nowell, Manchester . . .  | 1,297 0 0  |
| Shortland & Co., Nottingham . . .   | 1,271 0 0  |
| Hudson, Halifax . . .   | 1,018 0 0  |
| G. & H. Tyson, Halifax . . .  | 1,010 0 0  |
| Brook & Son, Halifax . . .  | 1,007 0 0  |
| STREET, Harrogate (accepted) . . .  | 956 0 0    |
| Engineer's Estimate . . .   | 1,050 0 0  |

**HASLEMERE.**

|  |  |
|--|--|
| For Revolving Shutters for Mr. C. F. White, New House, near Haslemere. |  |
| HODKINSON & CLARKE (Limited), Birmingham (accepted) . . .              |  |

## INTERNATIONAL HEALTH EXHIBITION, LONDON, 1884.

GOLD, SILVER, and BRONZE MEDALS were awarded to

**BUCHAN'S****PATENT SANITARY AND VENTILATING APPLIANCES.**

EASTBOURNE EXHIBITION, Oct. 1884.—"Special" Certificate of Merit (Highest Award) was granted to Buchan's Patent Ventilators and other Sanitary Exhibits.



GOLD MEDAL

When tested in London by Mr. S. S. Hellyer, BUCHAN'S INDUCED CURRENT FIXED VENTILATORS excelled all the other leading makers' Cows and Ventilators by 91,000 feet in twenty-one hours—and is still the Champion.

"The Best Cow is one of Mr. Buchan's."—"Ventilation and Heating," by Dr. BILLINGS.

J. MURRAY ROBERTSON, Esq., Architect, Dundee, on Nov. 8, 1884, writes:—"I have great pleasure in adding my testimony to the merit of your Ventilators. I have now used a very large number of them, and have found them to work admirably."

"W. P. BUCHAN, Esq.—SIR,—Your Disconnecting Traps and Ventilators and also the Grease Traps have given the utmost satisfaction here since they were introduced."

"Balmo'al: Nov. 27, 1884. "JAMES ANDERSON, Clerk of Works."

ILLUSTRATED PRICE LISTS FREE FROM

**W. P. BUCHAN, Sanitary Engineer, 21 Renfrew St., GLASGOW.****BELLMAN'S PATENT GULLY.**

This Gully possesses the following advantages:—

**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.****Avoids all Splashing.****Ventilates the Pipes and Trap.****Forms Drain for Area or Surface.****Is easy of Access for Clearance.**

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.

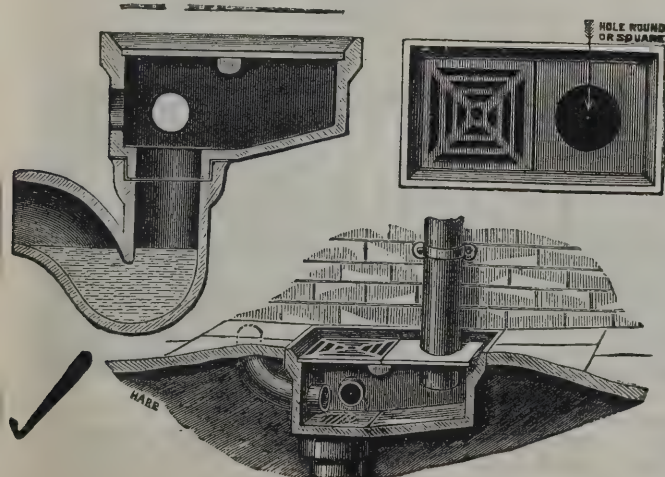
DESCRIPTIVE CIRCULAR ON APPLICATION.

**THIS GULLY IS HIGHLY RECOMMENDED by Authorities on Sanitary Matters.****PRICE AT WORKS, 8/6 EACH.**

Also SINGLE GULLIES, for Sink Wastes only, price 3/9 each.

**BELLMAN & IVEY, 95 Wigmore St., London, W.**

FOR TRAPS.





**KINGSTON.**

For the Erection of Villa in Birkenhead Avenue,  
Kingston, for Mr. W. Hall. Mr. H. J.  
WHITE, Architect, Wallington, Surrey.  
HORROCKS, Croydon (*accepted*). £600 0 0

**LEICESTER.**

For Enlargement of Board School, Elbow Lane,  
Leicester.

|  |        |   |   |
|--|--------|---|---|
| Black . . . . .                              | £4,580 | 0 | 0 |
| Plant . . . . .                              | 4,220  | 0 | 0 |
| T. & H. Herbert . . . . .                    | 4,208  | 0 | 0 |
| Major . . . . .                              | 4,121  | 0 | 0 |
| Bland & Son . . . . .                        | 4,050  | 0 | 0 |
| Hutchinson & Son . . . . .                   | 4,002  | 0 | 0 |
| Clark & Garrett . . . . .                    | 3,983  | 0 | 0 |
| KELLETT & SON ( <i>accepted</i> )* . . . . . | 3,970  | 0 | 0 |

\* About £8 per child.

Heating Lobbies, &c., Charnwood Street.

HADEN & SON (*accepted*). . . . . 51 15 0

**LONDON.**

For Building Board School, Montem Street. Mr.  
E. R. ROBSON, Architect.

|                                 |         |   |   |
|---------------------------------|---------|---|---|
| Patman & Fotheringham . . . . . | £15,093 | 0 | 0 |
| F. & F. J. Wood . . . . .       | 13,939  | 0 | 0 |
| Hart . . . . .                  | 13,225  | 0 | 0 |
| Kearley . . . . .               | 13,222  | 0 | 0 |
| Shurmur . . . . .               | 12,987  | 0 | 0 |
| Stimpson & Co. . . . .          | 12,860  | 0 | 0 |
| Oldrey . . . . .                | 12,700  | 0 | 0 |
| Goodman . . . . .               | 12,687  | 0 | 0 |
| Tongue . . . . .                | 12,625  | 0 | 0 |
| Downs . . . . .                 | 12,526  | 0 | 0 |
| Bangs & Co. . . . .             | 12,524  | 0 | 0 |
| Cox . . . . .                   | 12,460  | 0 | 0 |
| Niblett . . . . .               | 12,434  | 0 | 0 |
| Grover & Son . . . . .          | 12,427  | 0 | 0 |
| Lathey Bros. . . . .            | 12,381  | 0 | 0 |
| W. & F. Croaker . . . . .       | 12,374  | 0 | 0 |
| Wall Bros. . . . .              | 12,280  | 0 | 0 |
| Scrivener & Co. . . . .         | 12,172  | 0 | 0 |
| Howell & Son . . . . .          | 12,140  | 0 | 0 |
| Jerrard . . . . .               | 12,121  | 0 | 0 |
| Atherton & Latta . . . . .      | 12,100  | 0 | 0 |
| Wall . . . . .                  | 12,080  | 0 | 0 |

**LONDON—continued.**

For Desks, Chairs, Platforms, Cloak Stands,  
Blackboards, Tables, and Hinged Seats,  
for Coopers' Company Girls' School, Bow  
Road.

HODKINSON & CLARKE, Limited, Canada  
Works, Birmingham (*accepted*).

For Warehouse Lift, for Mr. Cox's New Mineral  
Water Works, Bethnal Green Road.

HODKINSON & CLARKE, Limited, Canada  
Works, Birmingham (*accepted*).

For Alterations and Additions to the Bermond-  
sey Public Baths and Washhouses, at the  
corner of Spa Road and Neckinger, for the  
Commissioners of Bermondsey Baths and  
Washhouses. Messrs. GEO. ELKINGTON &  
SON, Architects, 95 Cannon Street, E.C.  
Quantities by Mr. Henry Smith, 8 John  
Street, Adelphi, W.C.

**Contract No. 1.**

|  |        |   |   |
|--|--------|---|---|
| Bottrill . . . . .                           | £7,326 | 0 | 0 |
| Scrivener . . . . .                          | 6,464  | 0 | 0 |
| Nightingale . . . . .                        | 6,323  | 0 | 0 |
| Johnson . . . . .                            | 6,278  | 0 | 0 |
| Marsland . . . . .                           | 6,105  | 0 | 0 |
| Bentley . . . . .                            | 6,091  | 0 | 0 |
| J. & C. Bowyer . . . . .                     | 6,025  | 0 | 0 |
| Martin . . . . .                             | 5,950  | 0 | 0 |
| Holloway . . . . .                           | 5,875  | 0 | 0 |
| Tarrant & Son . . . . .                      | 5,793  | 0 | 0 |
| Tyerman . . . . .                            | 5,735  | 0 | 0 |
| Smith & Son . . . . .                        | 5,720  | 0 | 0 |
| Howell & Son . . . . .                       | 5,687  | 0 | 0 |
| D. D. & A. Brown . . . . .                   | 5,683  | 0 | 0 |
| Hann & Co. . . . .                           | 5,606  | 0 | 0 |
| Deacon . . . . .                             | 5,600  | 0 | 0 |
| Higgs . . . . .                              | 5,400  | 0 | 0 |
| Stevenson . . . . .                          | 5,287  | 0 | 0 |
| Smith & Barnes . . . . .                     | 5,109  | 0 | 0 |
| Bullers . . . . .                            | 5,083  | 0 | 0 |
| Smith . . . . .                              | 4,905  | 0 | 0 |
| Schofield . . . . .                          | 4,675  | 0 | 0 |
| STAYNER & SONS ( <i>accepted</i> ) . . . . . | 4,660  | 0 | 0 |

**LONDON—continued.**

For Works to be done in the Alteration and  
Addition of Engineers' Works at Ber-  
mondsey Baths and Washhouses, Spa Road,  
Bermondsey, for the Commissioners of Ber-  
mondsey Baths and Washhouses.

**Contract No. 2.**

|                            |        | With Porcelain<br>Baths. |   |
|----------------------------|--------|--------------------------|---|
| Jeakes . . . . .           | £3,400 | 0                        | 0 |
| Bradford & Co. . . . .     | 2,727  | 0                        | 0 |
| Frazer . . . . .           | 2,595  | 0                        | 0 |
| Bottrill . . . . .         | 2,153  | 0                        | 0 |
| Busbry . . . . .           | 2,134  | 0                        | 0 |
| Smith & Barnes . . . . .   | 2,012  | 0                        | 0 |
| Thomas & Taylor . . . . .  | 1,967  | 0                        | 0 |
| Elliott . . . . .          | 1,956  | 0                        | 0 |
| Seaton . . . . .           | 1,916  | 0                        | 0 |
| May . . . . .              | 1,900  | 13                       | 0 |
| Pratt & Reynolds . . . . . | 1,825  | 0                        | 0 |
| Thompson, Leeds . . . . .  | 1,050  | 0                        | 0 |

Deduct if Iron Bath. Engine and Gear.

|                            |      |   |   |      |    |   |
|----------------------------|------|---|---|------|----|---|
| Smith & Barnes . . . . .   | £182 | 0 | 0 | £120 | 0  | 0 |
| Pratt & Reynolds . . . . . | 180  | 0 | 0 | 170  | 0  | 0 |
| Frazer . . . . .           | 165  | 0 | 0 | 130  | 0  | 0 |
| May . . . . .              | 147  | 0 | 0 | 99   | 10 | 0 |
| Busbry . . . . .           | 125  | 0 | 0 | 120  | 0  | 0 |
| Elliott . . . . .          | 104  | 0 | 0 | 120  | 0  | 0 |
| Seaton . . . . .           | 104  | 0 | 0 | 130  | 0  | 0 |
| Bradford & Co. . . . .     | 86   | 0 | 0 | 157  | 0  | 0 |
| Jeakes . . . . .           | 54   | 0 | 0 | 160  | 0  | 0 |
| Thomas & Taylor . . . . .  | 36   | 0 | 0 | 164  | 3  | 0 |
| Bottrill . . . . .         | 20   | 0 | 0 | 200  | 0  | 0 |

Messrs. Pratt & Reynolds and Mr. Busbry  
allow £20 respectively for old materials, and  
Mr. Thompson gave no alternative tender.

For Heating Christ Church, Eala, Merioneth-  
shire.

BACON & Co., London (*accepted*).

For Fixing and Heating and Hot-water Supply  
Apparatus, at 16 Bachelor's Walk, Dublin.  
BACON & Co., London (*accepted*).

For Enlargement of Board School, St. George's  
Road, per schedule of prices.

Lathey Bros. . . . . £2,703 0 0

## ARTISTIC ❖ VENTILATION. ❖❖❖

**SHARP & CO.,** Hygienic and Hydraulic Engineers.**TESTIMONIAL**

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

HYDRAULIC RAMS (FYFE'S PATENT) AND SANITARY APPLIANCES.

Health Exhibition Awards:—1 GOLD, 1 SILVER, 4 BRONZE MEDALS.

11 HOLBORN CIRCUS, LONDON, E.C.

**PRIMROSE & CO. CHURCH ST. SHEFFIELD.** **ECLIPSE PATENT ROOF GLAZING.** NO PUTTY, PAINT, ZINC OR OTHER PERISHABLE MATERIAL.

IN EXTENSIVE USE FOR RAILWAY STATIONS, MILLS, &c.  
NO OTHER GLAZING CAN BE WARRANTED INDESTRUCTIBLE.

PRIZE MEDAL AWARDS: KENSINGTON, MANCHESTER, LIVERPOOL, DONCASTER 1882-3.  
THE ONLY GLAZING AWARD. INTERNATIONAL HEALTH EXHIBITION, 1884.

**READING CASES FOR THE ARCHITECT.**

Price Two Shillings.—Office: 175 Strand, London, W.C.



## LONDON—continued.

|  |        |      |
|--|--------|------|
| For Enlargement of Board School, Hindle Street. Mr. E. R. ROBSON, Architect. |        |      |
| F. & F. J. Wood  | £8,784 | 0 0  |
| Larter & Son   | 8,746  | 0 0  |
| Turtle & Appleton  | 8,570  | 0 0  |
| W. & F. Croaker  | 8,228  | 0 0  |
| Kearley  | 8,113  | 0 0  |
| Steel Bros.  | 7,993  | 19 0 |
| Wall Bros.   | 7,977  | 0 0  |
| Kirk & Randall   | 7,950  | 0 0  |
| Pritchard & Son  | 7,899  | 0 0  |
| Shurmer  | 7,884  | 0 0  |
| Bangs & Co.  | 7,877  | 0 0  |
| Howell & Son   | 7,826  | 0 0  |
| Grover & Son   | 7,788  | 0 0  |
| Goodman  | 7,777  | 0 0  |
| Lathey Bros.   | 7,767  | 0 0  |
| Patman & Fotheringham  | 7,725  | 0 0  |
| Jerrard  | 7,693  | 0 0  |
| Sargeant   | 7,680  | 0 0  |
| Hunt   | 7,609  | 0 0  |
| Smith & Son  | 7,597  | 0 0  |
| Stimpson & Co.   | 7,530  | 0 0  |
| Cox  | 7,524  | 0 0  |
| Oldrey   | 7,400  | 0 0  |
| Atherton & Latta   | 7,400  | 0 0  |

|  |      |     |
|--|------|-----|
| For Building School-keeper's House, Charles Street, Horselydown. |      |     |
| Lathey Bros.   | £505 | 0 0 |
| Oldrey   | 499  | 0 0 |
| Nightingale  | 497  | 0 0 |
| Jerrard  | 485  | 0 0 |

## NOTTINGHAM.

|  |  |  |
|--|--|--|
| For the Supply of Sanitary Pipes for the present year. |  |  |
| HAYWOOD, Moira (accepted).                             |  |  |

## SANDHURST.

|  |        |       |
|--|--------|-------|
| For the Erection of a New House, &c., Sandhurst, Berks, for Lieut.-Col. Harvey. Mr. W. RAVENSCROFT, Architect, 6 Market Place, Reading. Quantities supplied by Messrs. Cooper & Sons, Surveyors, Maidenhead and Reading. |        |       |
| Bottrill, Reading  | £6,591 | 16 10 |

## SPRAGUE &amp; CO.

Lithographers, Engravers, and Printers,  
22 Martin's Lane, Cannon St., London, E.C.

BILLS OF QUANTITIES, SPECIFICATIONS, REPORTS  
Copied or Lithographed with rapidity and care.

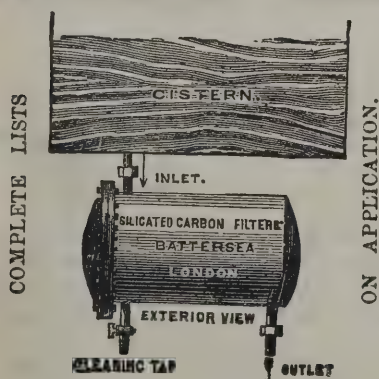
SPRAGUE'S "INK-PHOTO" PROCESS FOR REPRODUCING  
COLORED DRAWINGS OR PHOTOGRAPHS.

PLANS of ESTATES, with or without Views, taste-  
fully lithographed and printed in colours.

## PHOTO-LITHOGRAPHY.

CERTIFICATE BOOKS for Instalments, 3s., or with  
receipt, 5s. Bill Paper, 17s. 6d. & 25s. per ream.  
SPRAGUE'S TABLES, upon application.

## SILICATED CARBON MAIN-SUPPLY FILTER.



FOR FILTERING THE WHOLE OF THE  
WATER-SUPPLY OF A BUILDING BEFORE USE  
Complete ready for fixing, from £6 6s. each.

SILICATED CARBON FILTER CO.  
BATTERSEA, LONDON S.W.

## PLYMOUTH.

|   |        |     |
|---|--------|-----|
| For Building Cattedown Road Schools, Care-taker's Residence, &c., for the Plymouth School Board. Mr. HENRY J. SNELL, Architect. |        |     |
| Rowe, Devonport   | £5,366 | 0 0 |
| Gill, Devonport   | 5,300  | 0 0 |
| Debnam, Plymouth  | 4,791  | 0 0 |
| Harley, Plymouth  | 4,770  | 0 0 |
| Palk & Partridge, Plymouth  | 4,727  | 0 0 |
| Finch & Son, Plymouth   | 4,689  | 0 0 |
| Blowey, Plymouth  | 4,685  | 0 0 |
| Berry, Plymouth   | 4,680  | 0 0 |
| King, Plymouth  | 4,650  | 0 0 |
| Laphorn & Goad, Plymouth  | 4,590  | 0 0 |
| Shellabear, Plymouth  | 4,580  | 0 0 |
| Reed, Plymouth  | 4,310  | 0 0 |
| Lethbridge & May, Plymouth  | 4,200  | 0 0 |
| Trevena, Plymouth   | 4,057  | 0 0 |

## SOUTHAMPTON.

For the Erection of new Club Premises, Above Bar Street, Southampton, for the Royal Southampton Yacht Club. Mr. W. H. MITCHELL, Architect, 8 Portland Street, Southampton.

|                  |        |     |          |
|------------------|--------|-----|----------|
|                  |        |     | Tower.   |
| Chapman          | £4,461 | 0 0 | £422 0 0 |
| Stevens & Sons   | 4,427  | 0 0 | 357 0 0  |
| Dyer             | 4,410  | 0 0 | 307 0 0  |
| Rowland          | 4,129  | 0 0 | 340 0 0  |
| Sanders          | 4,098  | 0 0 | 348 0 0  |
| Bull, Sons & Co. | 4,089  | 0 0 | 348 0 0  |
| Crook            | 3,987  | 0 0 | 342 0 0  |

All of Southampton.

The consideration of the Tenders is deferred, pending the registration of The Club Building Company.

## SWANSEA.

|  |        |     |
|--|--------|-----|
| For Sewerage of Port Tennant, Swansea. Construction of Stoneware Pipe Sewers (3,000 yards), Cast Iron Pipes (750 yards). Mr. R. H. WYRILL, Borough Engineer. |        |     |
| Small & Sons   | £5,591 | 0 0 |
| Wakins & Jenkins   | 5,536  | 0 0 |
| Brown  | 5,519  | 0 0 |
| Williams   | 5,306  | 0 0 |
| Makay  | 5,257  | 0 0 |
| HILTON & SONS (accepted)   | 5,122  | 0 0 |

## SWANSEA—continued.

|  |        |       |
|--|--------|-------|
| For Construction of Pipe Sewers (3,658 yards), &c., Swansea. Mr. R. H. WYRILL, Borough Engineer. |        |       |
| Wilkes & Co.   | £2,799 | 3 11  |
| Hilton & Son   | 2,524  | 15 11 |
| Brown  | 2,219  | 10 9  |
| WILLIAMS (accepted)  | 2,155  | 7 1   |

## TUNBRIDGE WELLS.

|   |      |     |
|---|------|-----|
| For Additions to Societies Hall, Tunbridge Wells. |      |     |
| Brown   | £680 | 0 0 |
| Crates  | 596  | 0 0 |
| Elwig   | 595  | 0 0 |

## WILLESDEN.

For Supply of Iron Fencing, Two Double Gates, Three Single Gates, &c., for the Burial Board, Willesden.

HARVEY, Willesden (accepted)

Bayliss & Jones, Wolverhampton.

Fletcher, Wolverhampton.

Brookes & Co., Wolverhampton.

E. & J. Keay, Birmingham.

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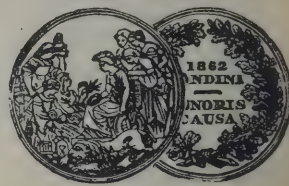


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# The Architect.

## THE WEEK.

THE American ambassador, in his speech at the Society of Arts on Wednesday, referred to what had been said by Sir HENRY WOTTON, that ambassadors were people sent abroad to lie for the good of their country. The reputation of one of the earliest English writers on architecture is of consequence, and it is not to be supposed that WOTTON was a liar or a man to excuse lies. The sentence was no more than a joke. Sir HENRY was asked while abroad to write something in one of the albums which German gentlemen were in the habit of carrying. The conversation at the party suggested to him a sort of pun in Latin on his own office, which was thus translated at the time:—"An ambassador is an honest man, sent to lie abroad for the good of his country." The conceit was supposed to be found in the double meaning in our language of the word lie; but as the Latin was more definite it is not surprising that the sentence was taken as embodying English diplomacy, and it was inscribed on several of the windows in Venice. So great an outcry was raised that WOTTON was compelled to circulate an apology throughout the courts of Europe.

MR. HERKOMER, A.R.A., on Tuesday lectured in the Edinburgh Philosophical Institution on "Conventionality and Proportion in Art." It was explained that the greatest qualities in art depended upon three things—(1) on the rightness of things; (2) on spontaneity, which was a quality outside correctness; and (3) on conventionality, which was the structural quality of art. If spontaneity was absent from the mental composition of the painter, all the tuition in the world could give him nothing in its place. Mr. HERKOMER also spoke of the difference between etching and engraving from this point of view. Etching by its birth, it was said, embodied spontaneity; but engraving had a different mission, and brought with it no conventionality. Painters etched, but all etchers did not paint. Some painters had etched, but few had engraved their own works. Photography could not give a soul to a picture, as it was too mechanical.

ON Wednesday next Dr. GARDNER will commence a course of lectures in the Archæological Museum, Cambridge, on the daily life of the Greeks. The following are the subjects:—January 28, Education; February 4, Physical Training; February 11, Medicine; February 18, Commerce and Trade Routes; February 25, Theatres; March 4, Dress; March 11, Houses. The object of these lectures will be to show how the information afforded by classical writers may be supplemented by the testimony of inscriptions and works of art.

IN the United States there is the disadvantage of an absence of archæological subjects; even a haunted house is not to be discovered without difficulty. As it is a natural instinct to be fascinated by the past, it is not surprising that so many Americans, from want of opportunity in their own country, have become explorers in Europe and Asia. It is now proposed to publish an archæological review, which will be the organ of the Archæological Institute of America. The consulting editor will be Professor C. E. NORTON, some of whose researches in Italy have been noticed in this journal. The objects of the review, which is to be issued quarterly, are as follows:—(1) to afford to American scholars the means of taking active part in the progress of archæological science by the publication of papers embodying the results of original research; (2) to provide a careful and ample record of archæological discoveries and investigations in all parts of the world, and to furnish reports of the proceedings of archæological societies, summaries of important papers, reviews of books, &c.; (3) to bring to notice and to illustrate important works in the domain of archæology contained in the public museums and private collections of America, which are little known. English archæologists will wish the new publication every success.

ADMIRERS of Montaigne will regret to hear that his château near Bergerac has been destroyed by fire. It belonged to M. THIRION-MONTAUBAN, a French deputy. It contained a large number of books, pictures, and objects of art, which have been also lost.

A CASE has arisen in Dublin which illustrates the grievances of the leasehold system. Some years ago a man bought the interest in the lease of a piece of ground which was held under Trinity College, and adjoins the College park. It was for forty years, but there appears to have been a tacit understanding that it was renewable for ever, and with this assurance a large sum was expended in erecting houses. The College Board did extend the lease for a further term of fifty years. The property is now worth about 750*l.* a year, which in Dublin is a rather large sum, and as the second term has expired the Board are about to take the houses as well as land into their own possession. If a farmer erected a house on a field belonging to the College tenant-right would be recognised and compensation would have to be given, but if buildings are erected on plots of the College ground in Dublin they are entirely at the tenant's risk. The reason of the anomaly is that in one case the ground is taken by square measure, and in the other by lineal or frontage measurements.

It is clear, from the discussion on fireproof doors at the Institute of Architects, on Monday, that the Metropolitan Building Act does not meet all the requirements of the present time. By restricting the means of protection to iron alone a bar is placed to invention. The district surveyors have to carry out a literal interpretation of the Act, although they might suggest much better arrangements from their own experience. Iron expands, and if a door made of that material is attempted to be closed after a fire has commenced, it will no longer fit closely and become a barrier to the flames. The fire-offices are also varying in their requirements, and, between them, surveyors, and the uncertainty of magisterial decisions, a London architect's commission has been no sinecure. The district surveyors should meet and candidly formulate their opinions on the shortcomings of the Act.

M. GAGET, director of the firm of MM. GAGET, GAUTHIER & Co., has been made a Chevalier of the Legion of Honour. The name of the firm is connected with some of the most important public works in France. But what has probably inspired the honour is the part taken by M. GAGET in the construction of the colossal statue of *Liberty*, which is now being taken down to be transported to New York. The work is a tribute to French ingenuity and organisation. When it is remembered that the figure is the biggest statue in the world, that it is composed of separate plates, and, finally, that it was put together in a confined space in Paris, M. GAGET's skill is apparent. The plates, we may mention here, are to be transported by barges along the Seine to Rouen, whence they will be shipped to New York. About a dozen of M. GAGET's men will be sent over to erect the statue, by rivetting the plates to the interior girders.

THE Lanthorne Tower, which forms part of the Tower of London, has been rebuilt under the direction of Mr. TAYLOR, of the Office of Works. The building, which is circular in form, and about 60 feet in height, is built of Kentish rag with stone facings and dressings, an octagonal castellated turret at the north-east side of the structure being carried several feet above the main body of the building. The walls are 5 feet in thickness, the tower containing five floors. In continuation of the tower eastward, and extending to the Salt Tower, a distance of 150 feet, a massive ballium wall has likewise been erected. It is built of similar materials to the Lanthorne Tower, and is 10 feet in thickness. It is 21 feet in height, and surmounted on the south side by castellated battlements. In the centre there is a recessed Gothic archway leading into the open area on the north side. Immediately on the north side of the wall a flight of steps is carried up to the level of the castellated battlements, leading on to a parade extending to the Salt Tower. The parade rests on a series of Gothic arches.



## THE ROMAN LAW OF BUILDINGS.

THE reports upon the tenure of building ground on the Continent suggest that the influence of the old Roman law is still felt, more or less, from Spain to Russia. In fact the customs which prevail far away in the north of Europe, with regard to house property, show that influence in a marked degree. Thus, for example, we find that in Finland, whenever a renewal of a lease is refused by the landlord, the houses do not necessarily become his property, and that the tenant who built them may be compelled either to remove them or to sell them to the landlord at a valuation. In the Baltic provinces, where timber is largely used in construction, there is a custom by which the lessee is at liberty to remove his buildings if he cannot agree with the landlord about the amount of compensation. Now it is remarkable that in the second book of the "Institutes," which give a digest of Roman practice, there is a somewhat similar recognition of the respective rights of landowners and of tenants who are house owners. It will be necessary, however, to say a few words first about the ancient law of property.

The Roman law affirmed that air, running water, and the sea were common to all, and consequently the seashore and the banks of rivers were not recognised as the property of individuals. A case like that which has been brought against the Clyde trustees, by Lord BLANTYRE, for interference with slob and mudland would hardly be heard in a Roman Court. Any freeman might erect a hut on a shore to dry his nets, and a right of way was recognised provided that no injury arose to farms, monuments, or edifices. The ground appropriated to public exercises, or races, theatres, temples, the walls and gates of towns, were also outside the limits of private property. If a temple were destroyed, the ground on which it stood was still considered as sacred. It is possible to trace a recognition of the principle of common property in the division of public lands under the agrarian laws, and in certain cases wherein the right of possession was possessed by the *gens*. But the consideration of that part of the subject would take us too far. What we desire to suggest is that there was a principle in the laws and traditions of Rome which circumscribed the power of individuals in acquiring property, and that although a man might covet certain things which he saw, and for which he was willing to pay, he might as well seek to possess the moon.

The extent of the limiting power was a topic which gave rise to much discussion among the nobles of the robe. For many years there was a controversy as to the proportionate proprietorship in such cases as when one man supplied timber and another made it into a chest, or when one man gave gold or other metal which was converted into a cup by an artist's skill, or when a block of marble was supplied and was fashioned into a statue by the hands of the slave of a fellow-citizen. All such subjects might appear mere trifles hardly worth consideration unless in a debating school, but the law of property was exhibited in them. There were two parties (Sabinians and Proculians) among lawyers, who held different opinions in regard to the respective rights. A third party endeavoured to take a middle course by maintaining that in such cases as those we have mentioned, if the species were reducible to the former rude materials, the owner of the materials was to be recognised as the owner of the new species. Thus the man who brought the gold would become the owner of the cup, and not the metal-worker, but it would be less certain in a case relating to the liquid which the cup might contain, supposing that the materials were not supplied by the man who compounded them. If a man used another's purple material to form a part of his vesture, the cloth then belonged to it by accession, but the owner could have an action against the purloiner, and it was indifferent whether the wearer had not himself made the robe. The principle of accession, it is needless to say, is recognised in English law, and is of two kinds, natural and artificial. One is seen in the acquirement by a proprietor of land which may be created by the action of a river; the latter (which has more interest to our readers) is seen in the property that is acquired by the owner of the soil in buildings which he has not erected.

By the Roman law every building was considered to

resemble the purple cloth, and to be an *accession* to the ground on which it was built, and therefore was the property of the owner of the soil. It might happen that the house was erected with materials which were not paid for on or before delivery. The contractor or merchant could not enter on the ground, pull down the walls, and remove the materials. The Roman legislators who framed the Twelve Tables were at pains to impede the demolition of houses, but the man who supplied the materials was not without his remedy. By an action entitled *de tigno juncto* he could compel his debtor to pay double their value, and all materials used on the building of a house came under that designation, which is suggestive of primitive timber huts. If by any chance the building was entirely or partly pulled down, in that case (unless he had already obtained the double value) the contractor could claim his materials, besides bringing an action for their use.

If a man built a house with his own materials on ground which was not his own, the house was still an accession, and as such became the property of the owner of the soil. If it fell or was pulled down he had no claim on the materials, of which he was supposed to have made a voluntary alienation. But if, after the completion of the house, the landowner claimed it, and refused to pay all the cost of building it, he was liable to an action for fraud. There was, however, a risk attached to the tenancies of building sites, for it was one of the surest marks of unwisdom in a Roman to have it said of him that he built on ground belonging to somebody else. It is not surprising that the prejudices against building leases have been transmitted through many generations, and are as strong as ever in those countries which formed parts of the Roman Empire.

It is the aim of legislators, like philosophers, to seek after unity in their productions, and, accordingly, it is found that the law which regulated the respective rights of soil-owners and house-owners was extended to very different things. We see an application in settling the ownership of manuscripts, which probably would be analogous to modern copyright law. "As whatever is built upon or sown in the ground belongs to that ground by accession, so letters also," says the compiler of the Institutes, "although written with gold, appertain to the paper or parchment on which they are written. Therefore if TITUS writes a poem, history, or oration on a scroll belonging to SEIUS" (these two names were as famous in Roman law as JOHN DOE and RICHARD ROE in England) "he shall not be deemed the master of his own work, which is to be reputed as the property of SEIUS. But should SEIUS demand his parchments from TITUS, without paying all charges of writing, then TITUS can defend himself on the plea *exceptionem doli mali*." The application of the law to painting was more liberal to the artists. Some of the Roman jurists, who were sticklers for consistency, considered that pictures and houses should be regarded as examples of accession, and that the owner of the tablet, whatever might be the material, could claim the painting. Others, again, said that it was absurd to suppose that the work of an APOLLES or a PARRHASIUS should go as a matter of course with a piece of wood that might be almost worthless. In this case compromise again came into play, and it was made possible for either painter or property man to purchase one another's rights. Strange as it may appear on this point, the Roman law has not become obsolete. Not long since the courts applied it in a case where expensive drawings had been made on lithographic stones, and the owner of the stones claimed as much right to the drawings as if he had paid for them. Those who formulated the principle of accession could not have anticipated so distant an application of it.

The English maxim, that every man's house is his castle, reveals the national spirit of isolation by which each Englishman becomes, as it were, a miniature island. The Romans endeavoured to counteract natural selfishness by insisting on the observance of mutual rights. Roads and aqueducts were carried along the most convenient routes regardless of individual rights. It was also laid down that neighbours should bear their neighbours' burdens (*ut vicinus onera vicini sustineat*), not figuratively, but in reality by allowing the beams of one house to rest when necessary on the walls of an adjoining house. Gutters and drains were often used in common. It was also nearly as risky for a man to raise his house and darken his neigh-



bour's lights as it would be in modern times in England. It was even said that a man could dig for sand on a neighbour's ground as a common right. What is more remarkable, it seems to have been a custom for a Roman, when dying, to take away from his heir all power that might be used to interfere with the amenity of a neighbour's house.

The necessity of good feeling between the inhabitants becomes evident when the character of the towns in the Roman state is considered. Drawings like those by the late Professor COCKERELL and Mr. ASHPITEL suggest that Rome was made up of nothing but streets of palaces. But in that city there were very narrow streets, bad paving, and imperfect drainage. In the provincial towns the arrangements are likely to have been in a worse condition. A cantankerous fellow could, by putting an extra storey on his house, or by cutting off the connection between his own and his neighbour's gutters, put many people to inconvenience.

English law in regard to use is much less elaborate than that of the Romans in dealing with their great variety of usufructs, although we can attain a similar luxury by special covenants. The English maxim which says that "he who hath the use of land is deemed to have the land itself," would scare a Roman lawyer by its extreme liberality. Tenants who took houses and fields for short terms were probably looked on with more or less suspicion, and had to be bound by restrictions, for at one time it was considered that a man who took a house was excluded from having a guest or a lodger. Afterwards it was laid down that an occupier had a right to inhabit a house with his wife, children, and freedmen. Slaves were of course to be accommodated elsewhere. There was a recognition of a different class of tenants, those who paid a proportionably small annual rent, but who were supposed to hold the house or land in perpetuity on condition of certain improvements being carried out. At first the heirs of the lessor had no right to interfere with the arrangements, even when the tenant had disposed of his rights. But doubts having arisen about the legality of such a contract, laws were enacted by which it was left to the parties to make their own arrangements. It is evident that within certain limits much latitude was allowed, and that in Rome, as in all wisely-conducted states, the truth was recognised that "society, a living, growing organism, placed with apparatuses of dead, rigid, mechanical formulas, cannot fail to be hampered and pinched."

### SCOTTISH ABBEYS.\*

THE speakers at one of the late meetings of the Edinburgh architects complained of the inaccuracy with which their countryman, Mr. FERGUSON, described Scottish buildings, and we have often heard similar objections raised against the writings of other north-countrymen, who, while living in London, have had the temerity to treat of work beyond the Tweed. What fate would await a Southron who attempted the task cannot well be imagined, and indeed there has been plenty of dissatisfaction because of the commercial enterprise of English publishers in undertaking the production of books on Scottish archæology. The objectors do not ask themselves or one another why they have not done more to make the northern buildings known to the world. When the opportunities are considered, the neglect seems to be almost culpable. There has been of late years more eagerness to produce records of the secular and ecclesiastical buildings, and the sketch-books of the Edinburgh Association contain many plates of the subjects. They are not all, however, equally well executed. If the conditions of the bequest did allow, the Rhind lectures might with advantage be devoted to the subject. The volume of which Mr. AITKEN is the author should meet with approval, since there is very little English work in it. Mr. AITKEN is a Dundee architect, and the book has been printed as well as written in that town. The only shortcoming it can have is that the plates have been reproduced in London from the author's drawings. The buildings described are the abbeys of Arbroath, Balmerino, and

Lindores, which are all typical examples of the English Gothic that is found in Scotland.

Architecture was one of the instruments employed by the great St. MARGARET in her endeavours to civilise the subjects of her husband, MALCOLM CANMORE. Her three sons during their reigns imitated the queen's example, and endeavoured to assimilate the Scottish and English churches. The northern bishops adopted the constitutions of southern dioceses, and a similar spirit of imitation was found in various ecclesiastical establishments. St. MARGARET died in 1093, when Romanesque held sway, and it had not been entirely superseded in 1178, when WILLIAM THE LION, her great grandson, founded the Abbey of Arbroath, or Aberbrothock, which was one of the grandest of Scottish conventual churches. Seven years before, that is in 1171, the Archbishop of CANTERBURY was murdered, and it shows the reverence in which his memory was held when we find that the King of Scots dedicated the church to St. THOMAS À BECKET. The building was sufficiently advanced to allow of the burial of the king within it in 1214, and it was completed in 1233. Fifty-five years is a long time for a church of the kind to be in hand, but the building was large, being 271 feet in length; and three years after the foundation WILLIAM was taken prisoner by the English, and could only regain his liberty by consenting to do homage for his kingdom, while afterwards he had to pay the enormous sum of ten thousand marks to RICHARD I. It is not surprising that under the circumstances there was a delay in the building works. The position of the building was well chosen, for the ruins now appear impressive when seen from a steamer; but, as Mr. AITKEN says, "its exposed sea-coast situation rendered it open to maritime attacks by the English; and, though one of the wealthiest abbeys north of the Tweed, its means must have been once and again seriously crippled, and the ambition of its art-loving abbots fettered, by heavy outlays for structural repairs." Forty years after the dedication the abbey suffered greatly by fire; in 1380 the roofs of choir, nave, and transept were destroyed by a second fire; and there was a third in 1445. The building was altered from time to time. How did the abbey fall into its present state of ruin? That is a question which is easier to ask than to answer. The early Reformers in Scotland were far less destructive than their English brethren, and it was not until the middle of the seventeenth century, when the Covenanters took power into their hands, that there was an approach to iconoclastic excitement. At Arbroath it was neglect rather than vandalism which caused the existing desolation. "The removal of the protecting roofs," says Mr. AITKEN, "necessarily led to decay of the interior under the disintegrating influences of the sea air. The fall of the heavier parts of the superstructure then became only a question of time; and so we learn that in the eighteenth century the western towers, and hereafter the central tower, fell with destructive force on nave and transept walls, a calamity hastened no doubt by imperfect foundations, which, if we may infer from the instances at Chichester, Ripon, and Peterborough, were the weak point of Mediæval architecture." It would be satisfactory to be assured that there is a possibility of the ruins remaining without further destruction. The walls are in peril from the isolated condition of the piers, which are still as much as ever exposed to atmospheric influences. The work is excellent, and it would be a national loss if what remains were to succumb, and the outline of the great window to be no longer seen against the sky.

Balmerino Abbey was long used as a quarry for neighbouring houses, and we are told that "of the original monastery, the chapter-house is the only part that remains in any degree of completeness. Of the church itself, very little is left above ground to satisfy the quest for imaginary restoration." The granary remains, and is still used for a storehouse. Mr. AITKEN has endeavoured to restore a plan, which appears to be consistent, but he has refrained from attempting to suggest the upper parts. The abbey was an offshoot of the Cistercian house which was founded at Melrose in 1136, and was destroyed in the Wars of the Succession, but to rise again at the desire of BRUCE.

Lindores was founded in the same year as Arbroath by the king's brother, and between the end of the twelfth and the end of the thirteenth century the principal churches were erected. There was historic interest about Lindores

\* "The Abbeys of Arbroath, Balmerino, and Lindores." Illustrated and described by George Shaw Aitken, F.S.A. Scot., Architect. Dundee: John Leng & Co.



for in it Sir WILLIAM WALLACE retired for repose after the battle of Earnside, and within its walls a compact was entered into by some of the Scottish knights to aid the enthronement of ROBERT the BRUCE. There is, unhappily, but little to suggest the beauty of the building. The plan of the church is peculiar, having only one aisle, in which the eastern bays are wider than the western. The three buildings are, like most of the Scottish work, rather severe in style, and it has not yet been satisfactorily explained why there should be so much difference between northern and southern work of the same period.

We are glad to see that Mr. AITKEN has obtained several subscribers for his interesting book, and it deserves to meet with liberal patronage. A book of the kind, containing so many plates, is necessarily expensive, and unless there is encouragement from Scotsmen it cannot be expected that Mr. AITKEN or any architect can repeat the experiment.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE sixth ordinary meeting of the Institute was held on Monday evening, Mr. Ewan Christian, president, in the chair.

### The Late Mr. Whichcord.

The PRESIDENT, in announcing officially the death of Mr. Whichcord, laid stress on that gentleman's devotion to the interests of the profession and of the Institute, whose services, whether in the chair or at the council-board, had been as valued as they were indefatigable, and who besides was ever ready to give assistance in a question of difficulty.

Professor KERR, in the course of some remarks, said he had seen statements in the two professional papers he was in the habit of reading, and he should not think it right to allow the opportunity to pass of contradicting the impression that Mr. Whichcord as president had been in any way unpopular. Mr. Whichcord was the first of a new dynasty, and certain differences of opinion and matters of controversy there had been, but in no way had these touched the loyalty of the Institute to him as president.

Mr. HANSARD referred to the time, about the year 1857, when Mr. Whichcord with Professor Kerr, the Brothers Papworth, himself, and others, had been in the habit of meeting at the house of Mr. Ashpitel. There the idea of a diploma for the Institute was first propounded; and although they were too few to carry their point, it had resulted in the establishment of the Institute examination.

Mr. MACVICAR ANDERSON expressed his regret at the loss not only of a valued colleague, but of a trusty friend.

Mr. WM. WHITE, F.S.A., then read a paper, entitled,

### Fireproof Closing of Openings, in Relation to the Metropolitan Buildings Act.

Mr. White, after some brief preliminary observations, proceeded to discuss the main subject, consisting of three essential parts: the material of the door, its fittings, and the arrangement of the opening.

In the first place, for the material of the door, iron still held its own. It was not altogether free from perils of its own, but on the whole it was the safest. Mr. Brannon's concrete doors on iron wire lattice frames were admirably suited for fireproof purposes. Wood itself was one of the best non-conductors, and when thoroughly encased in plaster or sheet iron its resistance was remarkable. An oak door double planked with metal or asbestos would be very safe. A solid oak door of 3-inch or 4-inch plank, even without extraneous protection, was said to resist almost any fire, provided its edges were well protected. He did not know whether the merits of cyanite or asbestos paint on deal doors had been duly tested. But the door prescribed by the Act was of wrought iron, the thinnest panel of which was not to be less than  $\frac{1}{4}$ -inch thick; hence it was commonly a sheet of iron rivetted on to a skeleton framing of the same thickness, dividing it into two or more panels. The possible perils incident to this construction were pointed out, but it was owned that in many serious cases the thickness of iron provided by the Act had sufficed; still, it might often be well if the metallic shield were thickened out. Something might also be done by a contrivance for automatic closing of doors on the outbreak of a fire. Whether iron were the best material or not, it was at present the only one required or allowed by the Act.

Secondly, the Act required the iron doors to be fitted into a rebated frame. There must not merely be a rebated frame for the door to be hung in, but it must be so fitted that no space must be left anywhere round the edges; thus no draught must be able to pass, and no heat, save by conduction and radiation. The first effect of the great heat upon the iron would be to so expand it as to fix it in its framework and make it still more

impermeable. Mr. White said he had been told by Mr. Aston Webb that on two occasions of a fierce fire in the smutting-room of a mill at Deptford, which was thoroughly burnt out, the ordinary iron doors fitted in this manner effectually resisted the communication of the fire to the adjoining division of the building, although in each case one of the doors was found to be warped out of its rebate. This doubtless took place in cooling, when the worst of the danger was passed. As a construction exactly answering to one not meeting the requirements of the Act, and one not more satisfying the wants of those who on their own account might naturally be thought to wish to adopt a reasonably fireproof system, were adduced the doors separating the different buildings lately destroyed by the great fire in the Queen's Road, Bayswater.

Coming now to the third point, Mr. White remarked that the facilities afforded for the spread of fire were largely and dangerously increased by the great and improper number of openings in each divisional wall. By means of these openings each storey became practically a huge horizontal warehouse, without any fireproof separation in its height, and accordingly with a succession of seven distinct risks, arising from the seven portions into which the building was nominally separated. On each of the five storeys were two openings in each party-wall dividing the several structures. Thus in each party-wall there were ten openings instead of one, and they were told that nobody was responsible for this state of things except the luckless depositors, who ought to have made a personal inspection of the premises, or possibly obtained a professional opinion on their construction before risking their property there. It was not for him, said Mr. White, to give an opinion as to who was responsible for so scandalous a state of things, but he was greatly astonished to be told there was a serious question as to the number of openings allowed by the Act in any one party-wall. He was told that district surveyors generally take it for granted there was no restriction. He knew that some who had studied the Act carefully were of the same opinion. Against this laxity of interpretation he argued earnestly and at considerable length. After all, however, it seemed to be undeniable that there were really no means of enforcing these provisions of the Act. No penalties were attached to its evasion in these respects. There was no Government Commission, and no system of inspectors to watch over its enforcement, as in the case of the Factory Acts. Again, the Act merely spoke of a building "used"—not "hereafter to be used;" and so the condition could not be enforced till after its occupation. The restriction would not apply till after the granting of the district surveyor's certificate, leaving the owner or occupier free to use it in any way he may see fit. If this should be so indeed it was a case for immediate legislation, or, at any rate, for administrative reform. It would be well if in the case of these huge warehouses matters could be put on a better footing for the protection of the public. In respect to dwelling-houses care was really taken, the district surveyor having power to get a magistrate's order to stop or even to take down improper work. In theatres, personal safety had not yet been really secured by the compulsory provision of due means of exit in the event of panic. He, however, had done his duty in calling attention to necessary reforms.

Mr. WOODTHORPE admitted that exception might be taken to some points in the Building Act, and there were things that were difficult for a public officer to interpret and to carry out. In cases of moderate fires the present form of the Act had succeeded. In cases of monster fires it would be difficult to find anything that would infallibly answer. Nothing could be perfect, not even an Act of Parliament. Many fires had been stopped by closing the iron doors. But a weak point was that there was no power to compel the closing of the doors. It was too late to close them when a fire had made great headway. Closing doors at sundown should be enforced under pain of a heavy penalty. Another thing, and this he hardly liked to speak of, was that fires were sometimes "committed." District surveyors had to do the best they could where opinions were divided.

Mr. JENNINGS said his experience of fires began with his earliest years. It seemed to have been implied that district surveyors did not do their duty, but it was well known they had no powers beyond bringing a case before the magistrate. He believed double doors had succeeded perfectly in localising a fire to one part of the building. To make compulsory the closing of doors would require that police should make regular rounds of inspection, and an Act could not carry that out. His experience during fifty years was that fire never passed through a properly-built 9-inch wall, except owing to the presence of timber. In making alterations people, without knowing, frequently cut through a party-wall up to the plaster on the other side. He did not think the number of openings in party-walls, from one department to another, mattered, provided there were double doors which were kept closed. The number of fires had increased with the adoption of lifts. These well-holes should also be closed at night by iron doors.

Mr. ROBERT WALKER protested against Mr. White talking



of district surveyors infringing an Act of Parliament. Iron doors, far from being a failure, had proved a great success, and this the insurance offices had recognised. A large amount of goods owed their preservation to the iron doors, in the fires at the Haymarket and Bedford Street Stores. It took much more to prevent fire spreading vertically than laterally through a party-wall unless there were openings protected only by plate glass or cross-currents. Sliding-doors, properly fitted, were better than swing-doors. The latter could seldom be closed at short notice, owing to the obstruction of bulky articles placed against them. The worst material for fire-resistance was stone, and stone was allowed to be used by the Act. Fire-brick, such as was used by Mr. Whichcord throughout his building, was the best material. If only one door was allowed in a party-wall, business would be altogether obstructed. There was no objection to the openings if the doors were properly constructed.

Mr. TAVERNOR PERRY showed a photograph of Messrs. Foster & Co.'s premises in Cheapside, the scene of the fire.

Mr. J. H. HEATHMAN, manager to Messrs. Merryweather & Sons, said the spread of fire at Messrs. Whiteley's was not caused by iron doors but by the proximity of woodwork to the doors. No timber should be allowed nearer than 18 inches to a door. He was in favour of swing-doors fitted with sufficient play to prevent them buckling under fire.

A gentleman, who did not give his name, from the Fire Insurance Committee, said they had lost faith in the Act, and that they did the best they could for themselves. He described a door that they required their surveyors to insist on, but on being questioned by the President, he could not point to a case where the efficiency of this door had been tested by a fire.

Mr. HANSARD said the fire offices were wrong in insisting on rabated folding-doors. Sliding-doors, not too large in dimension, properly sunk and raised, and run on iron guides, were best.

Mr. H. H. COLLINS said they had no option but to make the doors as laid down by the Act. The Metropolitan Board had invariably refused to allow him to make any departure from the terms of the Act, and rightly so, as the Board had no power to do otherwise. Instead of drawing up rules for constructing doors, the fire offices should put a stipulation in their policies to the effect that the policy would be void if the doors were not kept shut, or at least they might charge an increased premium. In this way they would materially help district surveyors. Mr. Ebenezer Saunders was a careful architect, who thought Mr. Whiteley's premises were properly built. Mr. Whiteley left depositors to insure their goods if they liked. Depositors, more especially one who was an architect, should have judged whether the building was secure enough to warrant putting property in it.

Professor KERR agreed with Mr. Collins that the remedy lay in the hands of the insurance offices. Surveyors were powerless in the matter. If the fire offices, having the privy of contract with the public, would lay down rules and insist on the rules being conformed to, great good would be done. It had always seemed to him, in connection with the apparent insufficiency in regard of the stipulation as to the area of limitation, that Parliament meant no more than to advise the public what to do, and trusted to the fire offices to make their experience useful. He hoped the gentleman from the Insurance Committee would bring his influence to bear on his colleagues.

Mr. WYATT PAPWORTH said that the essential point was that iron doors should be properly constructed.

Mr. WHITE, in replying, said he had not intended to make any insinuations against district surveyors. The openings in a party-wall should be limited, he thought, because the closing of the doors was not compulsory.

The proceedings terminated with a vote of thanks to Mr. White for his paper.

### ARVERNIAN ARCHITECTURE.

NONE of the local forms of Romanesque which arose in the latter half of the eleventh century has, says Mr. E. A. Freeman, in a communication to the *Guardian*, a more distinct character of its own than that which prevails in Auvergne. The architecture is as marked as the scenery; it would be hard to find the fellow of either anywhere else. And the Arvernian style is in some sort more satisfactory than the Angevin style. The Angevin style looks too much like a mere caprice. Why should people build churches so amazingly wide and low, and without any pillars and arches? It is always dangerous to ask Why? in any matters of this kind. It is hard to say why either an Arvernian or a Norman built in two different ways in those points in which they did build in two different ways, and to an Arvernian eye the Arvernian choice may seem as strictly the natural thing to choose as the Norman choice seems to us. But neither a Norman nor an Arvernian building has anything

like so much the air of a whim as the Angevin building. Most of the points on which Auvergne differs from Normandy may seem fair questions of taste. Each way of building is effective; each has its own specially strong points. We do not stop and look at either simply because it is odd, which really is sometimes the case in Anjou. On one point only we must draw the line. If we ask why—unless as a mere matter of caprice—the Angevin architects left out pillars and arches, we are driven to ask why—unless as a mere matter of caprice—the Arvernian architects built their west fronts and western towers of so strange a shape or lack of shape.

But in any case none of the varieties of Romanesque art is better worth study than the noble style of which the once collegiate church of Notre Dame du Port within the walls of Clermont is, on the whole, the typical example. At Issoire we find it on a greater scale, but a little later in date. Brioude has some special features of its own. At Riom we have not the pure Arvernian style, but a piece of instructive transition from that style to another. Saint Nectaire, in other points almost as typical as Notre Dame du Port, in most points wonderfully like it, differs altogether in one of the chief features of external outline. But in all we feel, as we feel in all these local varieties of Romanesque, that the word "style" is out of place. The difference is, after all, that of a manner of building, not that of a style of architecture, strictly so called. At Clermont and Issoire, as everywhere else, it soon strikes us how much more these various types differ from one another in their general arrangements and conceptions than they do in mere detail. Here, too, we see capitals, bases, whole windows, which might belong to one country as well as another. In these matters the various styles which grew up in the eleventh century hardly differ so much from one another as the later Gothic styles do. Here is a typical Arvernian church; most of its details—certainly not its south doorway—might be found in a typical Norman church; most of them might be found in a typical Lombard church. Yet our Arvernian church, as a whole, is altogether unlike anything either Norman or Lombard. Still less is it like anything Angevin. Auvergne certainly did not sympathise with the dislike to pillars which became characteristic of Anjou. The style naturally has affinities with that of Aquitaine, the land of which in its widest sense Auvergne formed part. We come in, for instance, for the barrel vault as a specially characteristic feature. But Auvergne loves columns and half-columns, and is not satisfied with the Aquitanian square piers. An Arvernian church shows itself at a glimpse as belonging to Southern Gaul and not to Northern. Yet the style has quite enough distinguishing features of its own to claim to be looked on as a distinct variety of Romanesque, and for Auvergne, as distinguished from Aquitaine, to be set down as a separate architectural province.

A typical Arvernian church has a character of its own which it is impossible to mistake. As a rule, a square tower at the west end and an octagonal tower in the middle suggest to an English eye a faint analogy to Ely or Wymondham. Very faint indeed the analogy is to either; still the square and the octagon are there, however much their proportions may differ from the proportions of the square and the octagon in the only two English churches with which we can compare them. The Arvernian central octagon has a strange look in the way in which it rises, not immediately from the four limbs of the church, but from a kind of oblong base which it is not easy to describe, but which is one of the most marked characteristics of the style, within and without. The truth is that the innermost bay, so to speak, of each transept, those which in the ground-plan range with the aisles of the eastern and western limb, are carried up to the full height of the lantern. Outside, this gives the tower this broad base to spring from; if the tower was away, it would have a good deal of the effect of the high choirs of the Cistercian churches in Sicily. Inside it increases the effect of height, and it further supplies a new pair of lofty arches to increase the complication of grouping, and of arches crossing one another, some measure of which is necessarily found in every cross church. The effect of this very singular arrangement is, to our taste, certainly much better inside than it is without.

If the central octagon has a base of its own to rise from, the square tower at the west end has something of the same kind. It commonly rises from between a pair of huge shoulders, forming outside what we might almost call a western transept, but which has a very different character from the western transept of Ely. Its lower stages have a tendency to take the shape of something like a narthex, which, opening into the nave by one or more arches, is sure to make a striking feature. And it is curious that this narthex not uncommonly has the air of being the oldest part of the church; at least, it often contains capitals which may well be older than any of their fellows. This narthex again, as forming part of the tower, has other stages above it, opening into the church, sometimes by wide arches like the German triforium galleries, sometimes by coupled windows. Indeed, most of the Arvernian peculiarities have, like this of the western tower and transept, a tendency to



affect inside and outside at once. At the first glimpse of one of the churches from without, we might be tempted to fancy that, Angevin fashion, it had no aisles. The nave has lofty side walls, with arcades and windows of two stages. In the lower range the windows are placed under bold wide blank arches. Above these an arcade of small arches and shafts has some of its members pierced as windows. We have in fact the windows of an aisle and the windows of a clerestory; only they are placed in the same wall, one above the other. To this arrangement, which looks strange outside, we find the key within. The rule of an Arvernian inside elevation is to throw the triforium and clerestory into one. The piers, of whatever shape, are lofty: above them runs an open arcade, just below the springing of the barrel vault, which seems universal. Inside, one hardly knows whether to call it a triforium without a clerestory, or a clerestory without a triforium. It really is a gallery of the width of the aisles below, with its windows placed in the outer wall, above those of the aisles. Such an upper range of windows over the aisle windows is common in the triforium of large churches. Only then there is the clerestory rising again behind and above all. Here there is no other clerestory; the wall with its two rows of arcades and windows is the full height of the church.

The east ends follow a type which is more common both in Northern and Southern Gaul than it is in England, though it once existed in a good many English churches from which it has now vanished. This is the type which we have already seen in so many of the churches of Poitiers, the apse with its surrounding aisle and diverging apsidal chapels. But there is one peculiarity which Auvergne seems to have to itself. The series of apsidal chapels is sometimes, not always, broken by a single square chapel in the middle, at the extreme east, making the actual east end of the church flat. Indeed this complicated and artificial arrangement of chapels becomes in these churches so completely a matter of course that we almost begin to long for the simple grandeur of the great single apse, as at Cerisy and Lucca, and at Peterborough before the addition of the retrochoir. Inside we are less likely to weary of the majestic arrangement of the columns of the apse, ranged close together with their narrow stilted arches and the clerestory above, forming a noble range of eastward *cancelli* for the high altar. We have seen this at Poitiers; we see it again at Clermont, at Saint Nectaire, and at Issoire. And wherever we see it, we welcome it.

In the details we mark some singularities in the use of ornament. Speaking roughly of the insides, we might say that everything is plain except the capitals. The Arvernian architects seem to have had little notion of the application of ornament to surfaces, and not much notion of the setting of order behind order. These are such fertile sources of enrichment in our own Norman buildings that the absence seems strange to us. The actual openings of the windows, for instance, are perfectly square and plain; but there commonly is a billeted label outside and shafts within, and the capitals of the shafts, like all columns, great and small, may be made as rich as any one chooses. The doorways are not very remarkable, and never have anything like the richness of our Norman doorways. Sometimes the actual opening is square, and that without any strongly developed tympanum. In the outside of the apses and transepts there is often a good deal of sculpture and inlaid work; here sometimes, and in the insides of the transepts also, we find that straight-sided patten—we can hardly call it an arch—which carries us to Lorsch and Earls Barton and the Pictavian baptistry. Otherwise there is little in these churches to suggest the earlier types of Romanesque—nothing, perhaps, except the strange capitals which have been mentioned as being sometimes found at the west ends, and now and then a midwall shaft, or an approach to it, in the many groupings of small shafts and arches with which the Arvernian interiors abound. These last are a marked feature of the style. Its arrangements bring in a good many blank spaces, and each blank space is seized on to make an unglazed window within the church. Such windows are specially common over the lantern arches. The arches are commonly round; but they sometimes take the shape of a kind of horse-shoe trefoil, which suggests a touch of the Saracen. He has not, however, as in some other parts of Aquitaine, suggested the use of the pointed shape for the main arches. When a pointed arch does appear in Auvergne, it may be set down as a sure sign of Transition, just as in Normandy and England.

The contrast between extreme plainness in some points and extreme richness in others is strongly marked in these buildings, especially in the insides. It is curious to see a church, with every arch left perfectly plain and square, with no enrichment of any other kind whatever, but with every column, half-column, window-shaft, crowned with capitals of the richest kind, not uncommonly alive with highly classical foliage. In weighing the disputes as to the dates of these churches, the idea often suggests itself whether the churches were not built in the latter half of the eleventh century—nothing, save an occasional fragment, suggests an earlier date than that—and whether these magnificent

capitals were often cut out in the latter half of the twelfth. At the same time we must remember that we are here distinctly in Southern Europe, in a Roman land, not in a land which is Teutonic even in that modified sense in which France and Normandy may be called Teutonic. Just as in Italy, we may fairly expect that such arts as were practised at all would be more advanced than they were in Northern Gaul, still more so than they were in England. The foundation of Notre Dame du Port is carried back to the year 580; we hear of a great repair or rebuilding in 866, after a destruction by the Northmen; we hear of building going on between 1185 and 1240. This is a little puzzling, as the first pair of dates are too early, and the second pair too late. There is nothing that one is tempted to carry back to 866, except perhaps parts of the crypt, and possibly two rude capitals in the narthex, according to the tendency which has been already mentioned. And though one could fancy the capitals throughout the church being carved in 1185, there is nothing that one could fancy belonging to as late a date as 1240. One is driven, though we may have no documentary evidence, to suppose a rebuilding in the eleventh century, with, if any one chooses, a certain embellishment in the twelfth, and to infer that the works of 1240 were mere repairs spoken of in the exaggerated way which is not uncommon.

## TESSERÆ.

### Scottish Architecture.

JOHN HILL BURTON.

ARCHITECTURE is proverbial for leaving the artist forgotten, while his work remains to create wonder and admiration. The world is filled with buildings of which the architects are unknown, but which yet are found by the careful student to contain enough to show the character of their acquirements, and sometimes the school in which they must have studied. It is now very well known that, after the rupture with England, Scotland took her ecclesiastical and baronial architecture from the Continent, and chiefly from France. The process by which the rich turreted châteaux of France were transferred to the moorlands of the north and the braes of the Grampians could not fail to be extremely interesting, if we could remove from it the veil which shrouds it in the mystery common to so large a portion of the architectural history of civilised times. How much of it was brought over by foreigners? how much learned in France by Scotsmen who returned to practise at home? are questions that must be asked in vain. We have no clue to the studies which induced Aytoun, by decorating the bulky framework of a German palace with a beautiful coronet of turrets and decorated chimneys, to conceive the plan of Heriot's Hospital. Even so late as the time of Sir William Bruce who worked in the last century, we are not aware how far the conversion of Holyrood into a French château of the sixteenth century was founded on a practical acquaintance acquired on the spot with that style of building. In far later times we know that Robert Adam studied the architectural remains of the Roman empire with a devoted zeal, attested by his great work on the ruins of Diocletian's mighty palace at Spalatro.

### Colour Grinding.

SIR C. L. EASTLAKE.

Among the mechanical causes of the clearness of colours superposed on a light preparation, may be mentioned that of careful grinding. All writers on art who have descended to practical details have insisted on this. From the appearance of some Venetian pictures, it may be conjectured that the colours of the solid under-painting were sometimes less perfectly ground than the scumbling colours (the light having to pass through the one and to be reflected from the other). The Flemish painters appear to have used carefully ground pigments universally. This is very evident in Flemish copies from Raphael, which, though equally impasted with the originals, are to be detected, among other indications, by the finely-ground colours employed.

### The Travellers' Club House, Pall Mall.

W. H. LEEDS.

The general idea, or *motif*, as the French express it, of the Pall Mall front, appears to be derived from that of the Palazzo Pandolfini at Florence, the design of which is attributed to Raphael. Instead, however, of at all derogating from the originality of the English building, the resemblance that may be traced between the two serves only to show how much the beauties of a model may be improved upon by a free imitation of it in the hands of a master. There is a *sveltezza* in the English palazzo which the Italian one does not possess, and more variety in its individual features; it has also more unity of character. It is free from that heaviness in its general pro-



portions, and from dryness of style in the details, which mark its archetype; and it further derives no small degree of additional elegance from the terrace-like screen to the area, which converts into a positive beauty—a graceful, as well as a picturesque accompaniment—what is almost invariably allowed to be more or less a blemish. While it accords so perfectly with the other in its taste, that it would be impossible not to recognise it immediately as the production of the same mind, even were it not known that the two elevations belong to the same building, the garden façade bears the impress of greater originality. The piquant effect produced by grouping together the three centre windows of each floor is as happy as it is unusual: this composition has an indefinable charm, an attractive *non so che* of sentiment, infinitely more captivating than that mere pomp of architecture which is frequently to be met with in designs that, nevertheless, betray complete inanity of ideas. Those who may be so disposed are at liberty to say that there is not so much in it, after all—merely a few windows and rustics, and some other members of detail; in short, nothing more than what anyone else might have done. Very true; but, then, how are we to dispose of the untoward question, Why have they not done so? Why should they—those, at least, who have practised the Italian style—have forborne to avail themselves of it to the extent we now perceive it was possible for them to have done, had they been capable of bringing to it that geniality of feeling and taste without which a work of architecture can never be a work of art, except of art at second-hand, whatever it may be as a production of manual labour and mechanical skill?

#### Preservation of Mural Paintings.

PROFESSOR CHURCH.

The first step in the preservation of mural paintings in disrepair is the complete removal of the whitewash, with which, in most cases, they have been coated. For this purpose I prefer ivory, bone, or horn spatulas, thin at the end, but not pointed. These generally prove sufficiently powerful, but occasionally steel implements are necessary. Whatever the material, the working end of the instrument should be ground in such a way as to present a very slightly curved edge, not the usual semicircular form. It may sometimes be necessary to assist the action of the spatula by means of slips of linen, wetted with hot strong glue, ironed on to the whitewash, and allowed to dry there before being torn off. Bellows and badger-hair softeners are useful to clear away dust and reveal the work. They must always be used (or, if needed, stencil brushes) before applying the reviving, fixing, and waterproofing liquid, which is made by the following recipe:—Melt 2 ozs. by weight of pure white bee's-wax, and pour the melted wax into 6 ozs. by measure of oil of spike lavender, or oil of orange peel. Warm the mixture until it is clear, and then add 10 ozs. by measure of picture copal varnish, and 26 ozs. of freshly-distilled spirits of turpentine. The above mixture is to be applied warm by means of a broad flat, soft brush to the wall picture. Sometimes it is necessary, if the colour be at all easily detached, to apply the fixing liquid to the wall by means of a spray producer. A scent-distributor, worked by an indiarubber ball, by bellows, or by Fletcher's foot-blower will answer.

#### Wood Dowels in Greek Masonry.

EDWARD DODWELL, F.S.A.

The frusta of the columns in the Propylæa were united with wood, which some have imagined to be olive, but those which I procured were of cedar. They were discovered when the blocks of the Propylæa columns were thrown down. The centre of the horizontal surface of each corresponding frustum contains a hole or mortice, 4 inches square and  $3\frac{1}{4}$  in depth; each hole is filled with a piece of squared wood, fitted exactly into the two contiguous mortices. The centre of this square piece is perforated for the purpose of receiving another piece of a cylindrical form, acting as a *gomphosis*. This was probably not designed to give any additional strength to the union of the blocks, but to serve as a centering, on which to turn the upper block, in order to insure a coincidence of the flutings; for it seems likely that the flutings were begun, or roughly sketched, before the masses of the columns were placed upon each other, and that they were finished afterwards. The columns of the temple of Apollo Didymæos, in Asia Minor, have been left in a very unfinished state, and the flutings are more or less imperfect. The columns of Eleusis, Thorikos, and Delos, and of other places, which are only fluted at the base and under the capital, probably owe their origin to that cause; but it is not likely that the flutings at the three last-mentioned places were ever intended to be finished. The cylindrical or inner piece of wood above-mentioned was worked extremely true, and evidently turned by means of a lathe. It has been, as it were, hermetically closed between the blocks and inaccessible to the contact of the air, and accordingly preserved without the smallest injury; the two outer bits were painted red; some of the colour was visible when first found, and the remains of it may still be seen. The columns of the

Parthenon and of other Grecian temples are, no doubt, united in the same manner, for the blocks that have fallen down have the square hole in the surface for the reception of the wood, similar to those of the Propylæa. Wood was made use of to unite stones in the earliest times. The eleventh verse of the second chapter of Habakkuk is applicable to the proverbial strength of such a union:—"For the stone shall cry out of the wall, and the timber that is between the joints of the building shall answer it." Flaminio Vacca, in his "Memoirs," says that the stones of the forum of Nerva, at Rome, were united with wood. But these instances probably relate to the dovetail or *imantosis*, and not to the pieces of wood in the columns above-mentioned, which do not act on the principle of the dovetail. Le Roy says that the columns of the Doric edifice at Thorikos were united by a hard, red wood, in the same manner as those of the Propylæa; and the late M. Dufoury, of the French Institute, who was at Agrigentum when a column of the temple of Juno fell, found the wood which united the blocks, and which, with the exception of being rather smaller, was perfectly similar to those of Athens. The frusta of the columns at Baalbec were united with large and long iron pins, centred in square pieces of the same metal. Round the hole, in the surface of the blocks at the Propylæa, is a circular ring elevated about half an inch above the rest of the surface, which fits into a cavity in the corresponding block. Round this ring is another, but not in relief, being only chipped and roughened with the chisel to increase adhesion. The stones of the Propylæa and Parthenon walls are united with iron, and lead. Metal cramps were generally termed *gomphoi* or *chalkeo-gomphoi*. But in Chandler's "Athenian Inscriptions" they are called *sphekiskoi*, from their resemblance to the form of a wasp, being thin in the middle. These are holdfasts, or double tenons, called *securiculæ* by Vitruvius. Thucydides informs us that the stones of the long walls of Athens were fastened with iron and lead.

#### Classic Proportions.

EDWARD CRESY.

An hexastyle portico, including its entablature and pediment, has its masses exactly equal to its voids. The columns taken by themselves, and without any portion of what lies upon them, are equal to one-half the voids, so that the columns and entablature are equal in quantity. The portico of the Pantheon squared in mass contains 7,194 superficial feet, the voids 3,512, so that an octastyle temple as well as an hexastyle temple are established upon the same principle, so curiously that no one would credit it. I have rejected inches and decimals, and call the entablature under the pediment ten feet in height and the pediment twenty, without its raking cornice, the area of which equals that of the entablature. So the entablature, the pediment, and the columns, have masses nearly equal, or divide the 3,512 superficial feet between them, or nearly so.

#### Plasterers' Work in Paris.

C. BARTLETT.

The French artisan has less choice of materials than the English. While the latter has many different cements to work with, the Frenchman has very few indeed, mainly working in that plentiful material plaster (gypsum or sulphate of lime), the coarse being used for rough floating, and for finishing the plaster is sent through a fine sieve. The plaster setting quickly is a great advantage, as it enables them to finish a room off at once, so that one preparation is enough for, say, one room. With us it is very different, as we have to wait for the drying of the different coats, causing delay besides keeping more in hand at one time, and finishing nothing right off. The style of work seems rather wasteful to an Englishman. The French plasterer, for good work, makes use of rules or strips of wood cut thin. These he beds or "sticks" against the ceiling, walls, or partitions, to serve as guides for the floating-rule with which he floats the walls, &c., straight. This adds to the price of the work, the time of the carpenter, and the cost of the timber. With us the system is to form our lines or "screeds" with the materials with which we may be working in cornices, whether for internal or external work. In cornices, whether inside or out, the Frenchman uses more tools than we do. We use straight-edges, or joint-rules of cast steel, with a few small tools; this is all that is required for our intersections or "mitres," but in Paris the workman uses wooden moulds, made to the shape of the various members of the cornice he is forming, said moulds being akin to those used by our masons. This takes considerable more time than we are in the habit of spending on such work. In plain work they use fewer tools than we do. The principal tool is a rather broad, thick, triangular trowel. With this a man lays or spreads on his material, afterwards using one edge as a drag to scrape down all those parts that may be uneven; the work is then finished with a fine coat worked smooth. They are not so particular as ourselves regarding the colour of their plaster. We look with distrust upon high-coloured plaster, well knowing it sets too quickly to be worked properly, with the grave defect of "giving" or softening after it has been laid on for a few hours.



## NOTES AND COMMENTS.

AN exhibition of the works of the members of the Society of Painter-Etchers and other artists will be opened in the Dudley Gallery on May 25, and close on July 4. All forms of engraving on metal are eligible for admission, subject to the approval of the council, and are to be sent in from the 11th to the 14th of May. A commission of 15 per cent. will be charged by the Society on the catalogue price in respect of any works sold during the exhibition.

THE lectures on architecture at the Royal Academy will begin next month. On February 11, Mr. R. STUART POOLE, of the British Museum, will describe "The Cairene House." Mr. BODLEY, A.R.A., will, on the 20th, treat of "Some Principles of Ancient Architecture, and their Application to the Modern Practice of the Art." Mr. PENROSE is to speak about "Greek Architecture" on the 27th. On March 2 and 6 there will be two lectures by Mr. AITCHISON, A.R.A., on "Staircases." Mr. WATERHOUSE, A.R.A., has selected "Westminster Abbey" for his lecture on March 4. It may also be mentioned that, during February, there will be lectures on "Greek Sculpture—School of Praxiteles," by Mr. NEWTON; on "Medals," by Mr. R. STUART POOLE; on "Imitation," by Mr. THORNYCROFT, A.R.A.; and on "Bronze Casting," by Mr. BOEHM, R.A.

THE Louvre lately obtained a collection of sketches by GIACOMO BELLINI, of which photographs have been submitted to the French Society of Antiquaries. They are on parchment, and form part of the same series as those by the painter in the British Museum, and as the history of the sketch-book can be traced, there can be little doubt of its genuineness. There are among the sketches studies from nature, designs for an equestrian statue, views of buildings, landscapes, and biblical scenes. GIACOMO BELLINI was not so famous as his sons GENTILE and GIOVANNI, but anything from his hand is of interest in connection with the early history of the Venetian school.

MR. OWEN W. DAVIS has rendered such good service to the architectural profession as ornamentist and draughtsman, that the announcement of his book, "Art Work," will give general satisfaction. According to the author's statement, the work will consist of a series of artistic compositions, forms and other details, as shown in the various industries employed in the use of marble, stone or terracotta, metal, wood, furniture, and textile fabrics, as well as when used in the various arts associated with decoration. The subjects have been drawn on stone by Mr. DAVIS, and selected from portfolios of notes, sketches, and illustrations which have been accumulated by him throughout twenty years of professional practice. The examples have been taken from Archaic, Antique, Italian, Renaissance, Mediaeval, and Oriental authorities, and will include some of the best unpublished works of the Brothers ADAM, besides details by the late Sir M. DIGBY WYATT, and a few original designs by Mr. DAVIS. There will be 85 plates, containing 550 examples, and, from the specimen we have seen, they will be all clearly executed. The volume will be a general reference book for design. It will be restricted to the subscribers.

A LECTURE which was given by Sir FREDERICK BRAMWELL, at the Institution of Civil Engineers, contains figures that show the difficulties which attend the discovery of a new water supply for the metropolis. It has been found that, out of a total annual rainfall of 27.843 inches, 6.519 inches passes through three feet of soil, and 10.590 inches through the same depth of chalk. The proportion of the percolation to the rainfall varies greatly from time to time, even for the same seasons. Every gallon of water pumped and carried away from an absorbent district is so much abstracted from the flow of the streams of that district. In inland districts the streams form an exact gauge of the excess of the rainfall over the water carried off by evaporation, and any artificial diminution of the water must affect the streams. An annual supply of 4 inches of rain, from

every square mile of country, gives a daily quantity of nearly 160,000 gallons of water, which, at 32 gallons per head per diem, will suffice for a population of 5,000 souls. A population of 4,000,000, like London, will therefore, if supplied from deep wells in the chalk, absorb the total water supply of 800 square miles of country, or of an area one-quarter larger than the county of Hertford, and the whole of the surface streams over this large area will disappear in dry years.

WHILE workmen were lately employed in excavating the foundations of a house in Rome on a plot of ground belonging to the Banca Italiana, and under the direction of M. MARAINI, they made an important discovery. A structure was met with which enclosed the marble tombs of four members of the noble Roman family of LICINIUS CRASSUS, of which mention is often made by historians. It is considered that in its way the discovery is the most important since 1780, when the sarcophagus of SCIPIO BARBATUS, which is now in the Vatican, was found in the Vigna Sassi. It is the only memorial of the CRASSUS family.

THE Heath at Newmarket is hardly the place to expect archæological discoveries, but in levelling a mound some pre-historic arrow-heads and fragments of metal have been found, which are believed to be of great interest. Mr. HUGHES, the Woodwardian Professor of Geology at Cambridge, has undertaken to write a report on the remains. The "ditch" which is known to frequenters of the Heath is supposed to be a part of an immense earthwork, and constructed probably by the Britons. According to another tradition it was the boundary which separated the East Angles and Mercians.

THE proposed district hospital at Newbury is only a small affair, but it has been the means of producing no less than one hundred and twenty sets of plans. In other words, the value of the labour expended on the designs must exceed the contemplated cost of the building. A case of this kind is a revelation of the present state of the profession. Mr. WATERHOUSE is the assessor, and has selected ten designs for further examination.

THE public ought to be wearied of the case of BELT *v.* LAWES; but whenever it crops up there is always a certainty that something surprising will be heard. The application for the discharge of the unlucky defendant in the Bankruptcy Court was not a mere formal affair, for it was announced that one of Mr. BELT's witnesses had confessed that his evidence at the notorious trial was not worthy of belief. Herr SCHOTZ had the generosity to hand Mr. GEORGE LEWIS a statement to the effect that he was the author of the three small sketches of the BYRON Memorial which had been produced at the trial, and which he made for the purpose of deceiving the judge and jurymen; that he was also the modeller of the *Hypatia*; that his time-book was a fabrication; and that, in fact, the affair was to him a speculation, as he was to have a third of the spoil. But what security is there that a man who disregards veracity in Westminster will respect it in Ely Place? The confession of the remorseful witness has been marked, and in the interest of public justice and of English art, the attention of the authorities should be drawn to the document.

A COURT-HOUSE is to be erected in Toronto, and the competition for designs is open to the world. Mr. RENNER, a local architect, points out that, according to the instructions, only 4 per cent. on the contract amounts will be allowed for the services of the author of the selected design, and that all designs, including drawings, specifications, estimates, &c., for which premiums are awarded shall thereupon become the property of the city of Toronto. The drawings must be deposited free of charge. Mr. RENNER considers the conditions to be an insult to the architectural profession, but a little experience of the conduct of the people who get up competitions in England would put the Toronto officials in a new light.









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THE HISTORY OF ART.

DECORATIVE FRIEZE

BY MONS<sup>rs</sup> FRANÇOIS EH RMANN







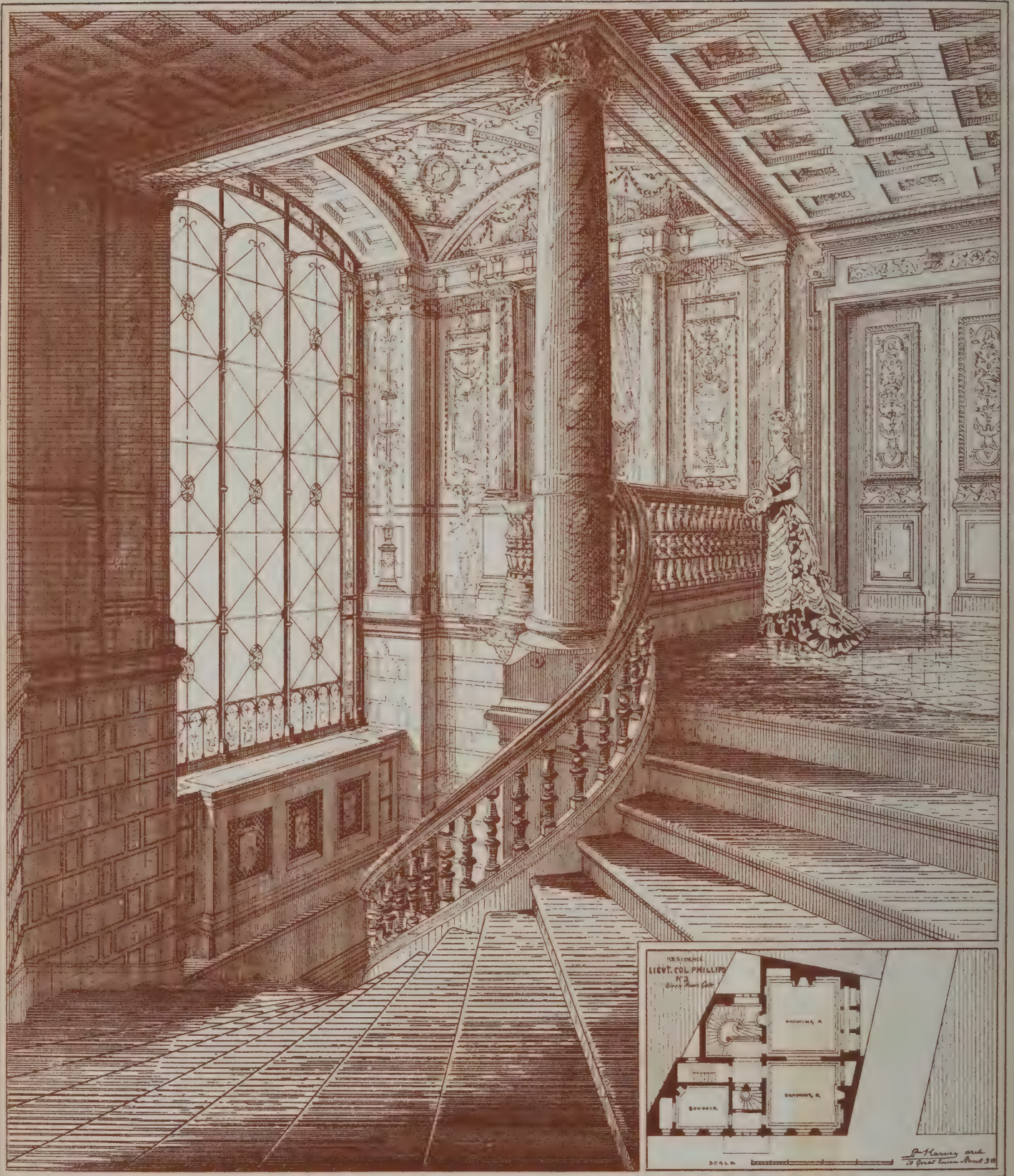


Two Houses Old Park • Enfield • W. Gillbee Scott Architect

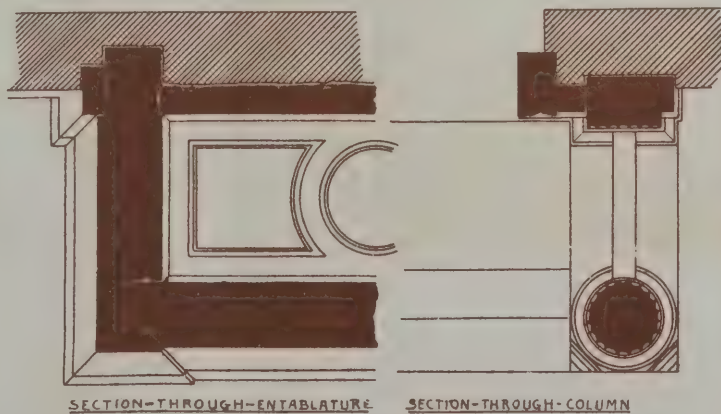
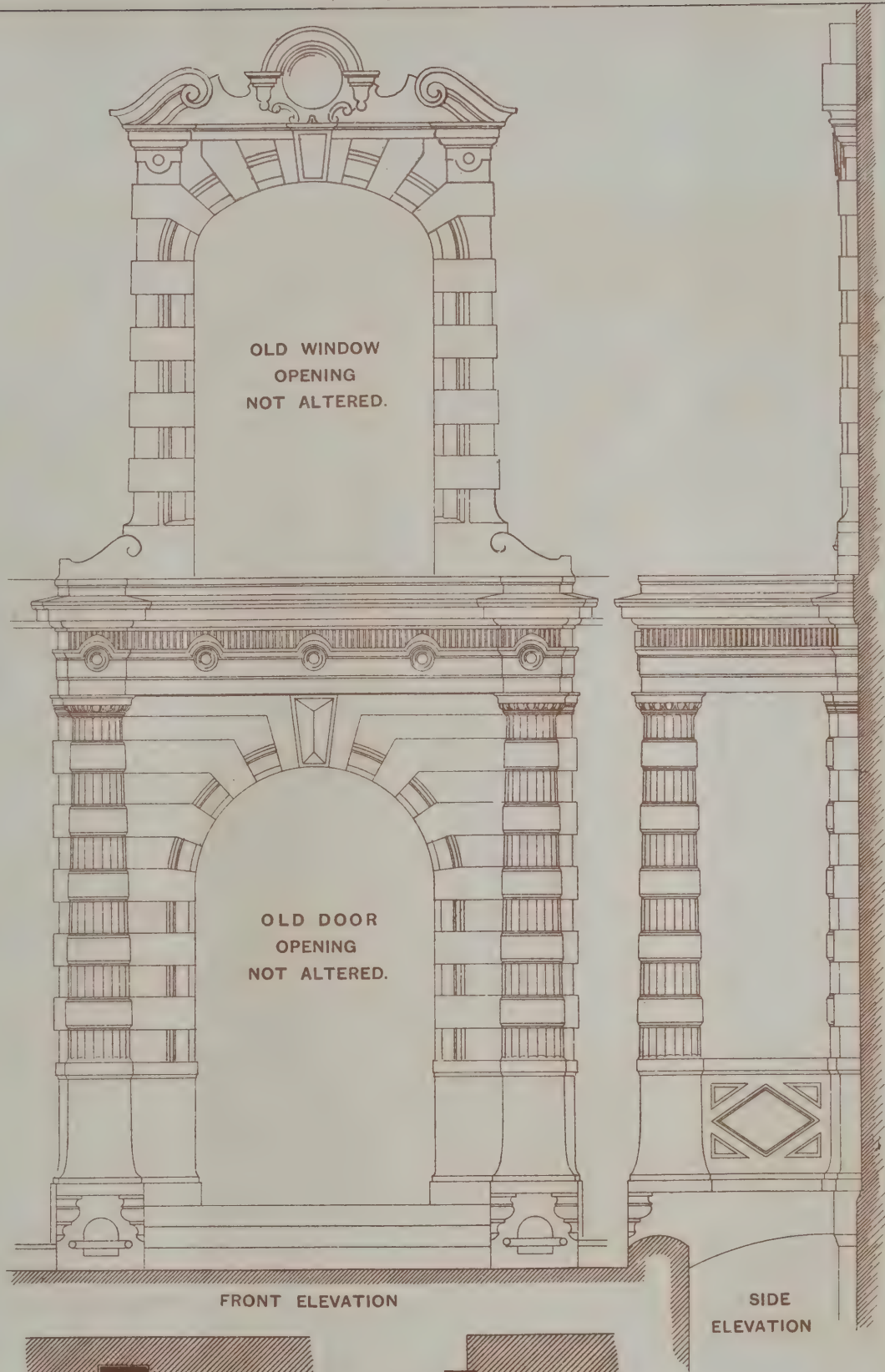












PLANS OF THE PORCH  
for the house of Sir Bradbourne & Seven Anne's Gate  
designed by  
Lawrence Harvey and 10 G<sup>th</sup> Street W. Westminster







Meyrick Lodge.  
BOURNEMOUTH  
for W H Doiré Esq<sup>r</sup>  
H E Hawker Archt









## ILLUSTRATIONS.

## MOSAIC PANELS.

FROM time to time we have published illustrations of figure-pieces in many styles by M. LEMAIRE, of Paris. We now give one of a different class in which tropical plants have been adapted. The design was prepared for the staircase of the building belonging to a financial company, and the ingenuity of the artist will be observed. The semi-circular panels are filled with forms which make those spaces complete in themselves, and in addition they are the completion of the vegetation shown on the lower panels. While a decorative arrangement has been adopted the figures have been depicted with a vigour that makes the conventional treatment appear very cold when placed side by side with those panels. The French decorators are not afraid to act on the Greek saying that "in all things that are natural there is ever something that is admirable," and in works like the one illustrated they compete with the best Japanese designs. The panels show also the surprising versatility of M. LEMAIRE. The mosaics have been carried out by Signor TACCHINI.

## PORCH AND STAIRCASE OF LORD BRABOURNE'S TOWN HOUSE.

THE two illustrations from the house, No. 3 Queen Anne's Gate, Westminster, have been published as exemplifications of the results of SEMPER's teaching. They are described in the letter of the architect, Mr. LAWRENCE HARVEY, which is also published in this number.

## MEYRICK LODGE.

THIS building has been lately designed by Mr. H. E. HAWKER, architect, Bournemouth.

## TWO HOUSES, OLD PARK, ENFIELD.

THESE houses have recently been erected upon a fine site, overlooking a large stretch of open, well-wooded country. The architect is Mr. W. GILLBEE SCOTT, of 25 Bedford Row, W.C., who designed the first of the two houses in the view for his own occupation. They are very substantially built and well finished. All mouldings are to special detail. The ground-floor boards are in  $4\frac{1}{2}$  inch widths, iron-tongued, and  $1\frac{1}{4}$  inch thick. Tile floor in hall, by Messrs. W. B. SIMPSON & SON. All the staircase and watercloset windows have lead light glazing, by Mr. C. H. BREWSTER, which has been very artistically carried out. The doors are all five-panel, and all the furniture was supplied by Mr. JAMES HILL. The door-handles are dull reeded ebony, and the finger-plates, bell-pulls, &c., match them. The baths are white glazed porcelain, supplied by Mr. JOHN FINCH. The walls are faced with red brick, the upper portions being hung with red Bracknell tiles or filets. The roofs are covered with Broseley tiles. All the external woodwork is painted white. The drainage has been carefully executed; all drains have HELLYER's interceptors. The soil-pipes are continued through the roof the full diameter, and finished with BANNER's extracting cowls. The builder is Mr. ALLEN FAIRHEAD, of Sydney House, Enfield.

## THE ARCHITECTURAL ASSOCIATION.

THE eighth ordinary meeting of the Association was held on Friday evening, the 16th inst., Mr. Cole A. Adams, President, in the chair. The following gentlemen were elected members:—Messrs. E. C. Macpherson, G. W. Tait, C. H. Mason, R. W. H. Edis, G. E. Elkington, and S. T. Wenborn.

A visit was announced for to-day (Saturday), to St. Marylebone parish church, Mr. Harris, architect.

The PRESIDENT addressed the members on the subject of the Sketch-book, and pointed out how desirable it was that the work should be supported and contributions made to its funds. In announcing the lamented decease of Mr. Whichcord he spoke of his honourable career, his skill and knowledge as an architect, and of the estimation with which he was regarded as an arbitrator.

Mr. F. R. FARROW then read a paper on

## The Ventilation of Public Buildings.

Mr. FARROW, in the course of his paper, said: Dr. Reid, who devised the original system of ventilation for the Houses

of Parliament, considered that under ordinary circumstances a well-distributed supply of 10 cubic feet per minute was ample. In Germany the usual practice is to supply 10 to 12 cubic feet per minute for schools, 20 to 25 cubic feet for meeting-rooms, and 40 to 75 cubic feet for hospital wards. The Austrians provide from 15 cubic feet for theatres and banqueting-halls, to 25 cubic feet for ball-rooms, council-chambers, &c. In America from 10 to 30 cubic feet, according to the purposes of the room, are given, with an increase to 60 cubic feet in the case of hospitals. Fresh air should never enter at a greater rapidity of current than 2 feet per second, while a rate of 1 foot per second is perceptible at the point of entry. Nor should the temperature for our climate and hygrometric conditions be less than 50 deg. Fahr., this being lower by 20 deg. than is possible in America.

One of the most important and warmly-contested points is the position of the inlets and outlets for the fresh and vitiated air. Are we to introduce our fresh air at the lower part of the hall and extract it at the top, or are we to bring in our fresh air at the top and take it out at the bottom? The advocates of the downward system claim that foul air is heavier than fresh air, and therefore we should extract the foul air at the lower level. But we must remember that our principle is that foul air is heavier than fresh air of equal temperature; and if we look at the source of foul air we see that it is exhaled by the individual, whether from the lungs or from the skin, at a temperature of 90 degs., and therefore, except at this temperature, has *prima facie* a tendency to rise in respect of its warmth, though there is doubtless a counteracting influence by reason of its impurity. The point at which the weight of exhaled air at 90 degs. is balanced by the weight of fresh air is at a temperature of 85 degs. for this latter. If, then, the surrounding temperature is below 85 degs., the foul air rises until it loses so much of its heat as to render it specifically heavier than the normal atmosphere. During this ascensive process, however, it must not be forgotten that, as air is a gas, diffusion is taking place rapidly, and the foul air is therefore, while losing heat, losing weight also by the dilution of its impurities with the purer atmosphere.

Therefore we can see that if fresh air be admitted at the top of the hall it will meet these ascensive columns of vitiated air and become itself adulterated before reaching the occupants, and this adulteration will be in a continually increasing degree until the air breathed by the occupants will be the most vitiated possible for any given supply of fresh air. The descending system has, however, advantages in the avoidance of draught and the equable supply of air to all parts of the room alike. The universal system in Germany and Austria is to introduce the fresh air at the upper part of the room in winter and at the lower part of the room in summer, the extraction being in a contrary direction, so that the warm air in winter, cooling naturally, descends, while the cool air in summer, becoming heated, rises. This method, and the argument in favour of it, depend to a very considerable extent on a very high dew-point, so that there is a far greater chance of success than there would be here in England with a low dew-point. In the case of a hall without ventilation there is a constant rolling stream of air passing upwards from the heating apparatus to the top of the room; then cooling it again descends on the other side of the hall, and so keeps up a constant circulation. If ventilation introduced to such a hall is insufficient to carry off the whole stream of heated air as it ascends, the roll of the atmosphere will not be wholly diverted but will still continue, and thus there may be with advantage an extraction of air at the lower level. But this method of extraction can only be justified for adoption when artificial heating is abundant, and when no gas-lighting is in use to vitiate and heat the upper strata of air. This will accordingly limit the effectiveness of the method to the daytime of a portion only of the winter months, and hence may, I consider, be practically inadvisable in our country.

Our object in ventilating a public building should be to provide an adequate supply of fresh air, uncontaminated as far as possible by contact with foul air, which latter should be removed as speedily as may be; and, further, that an adequate supply may, in ordinary cases, be taken to mean from a minimum of 10 cubic feet per minute for each individual, rising to about 30 cubic feet, according to the use and circumstances of the building. Next, we learn that draught must be avoided by careful regulation of the rate of current, temperature, and humidity of the fresh air, and that vitiation of the instreaming atmosphere will be best by bringing in the fresh air at the lower part of the hall, and extracting the foul air at the upper part. There are three methods by which our object may be attained. We may force in the fresh air, and allow the foul air to escape; we may draw out the foul air and allow the fresh air to enter; or, we may both force in the fresh air and draw out the foul air. The method to adopt must depend both upon the peculiarities of each case, and upon the means which we employ to obtain our end. These means may be divided into two classes, natural and artificial. The arti-



ficial or mechanical means of ventilation may be classed in three groups—the self-acting, those needing a small amount of attention, and those needing constant attention.

Mr. FARROW then described various mechanical appliances, and among them the "Syphon" ventilator of Charles Watson, the various modifications of the "Archimedean screw system," including the "Empress," "Imperial," &c., Banner's cowl, and Boyle's "air-pump" ventilator. Boyle's ventilator had no moving parts, but consisted of a skilful arrangement of curved plates and cross diaphragms, so disposed as to divert any wind-current into such a direction that the principle we are considering may come into operation. A wordy strife had been waged between the partisans of these last two inventions; but, looking at it dispassionately, it might fairly be admitted that each was logical in its idea and efficient in its action. Personally, of the two, he preferred Boyle's ventilator, because it had no moving parts to get out of order, and was more easily enclosed in a turret or flèche, to obviate the fearful ugliness from which all these devices suffered. Verity Bros.' patent ventilator and another, called the Aërophor, now being introduced from Germany by the agents of Messrs. Treutler & Schwarz, of Berlin, were also described.

The PRESIDENT, in opening a discussion, spoke of Boyd's warm-air stoves, used extensively by Mr. Robson in his Board schools, which poured a volume of air into the room, and did not depend on leaky doors or windows for their draught. Tobins' tubes were exceedingly useful, and a down draught might be easily obviated. For cottage houses the ordinary sash window might with advantage have the bottom bead of sufficient height that a current of air might be admitted, Tobin fashion, between the sashes, by raising the lower sash slightly.

Mr. GOTCH proposed a vote of thanks to Mr. Farrow. Systems of ventilation were still far from being perfect, and many elaborate systems would only do for large buildings where money was no object. The system at the Vienna Rathaus seemed to be very effective, and to get over the difficulty of how to distribute fresh air equably to a large or crowded assembly. The members in the House of Commons sat on a grating covered with matting, through which the air passed from large and spacious corridors below. The air was brought into these from the outer courts, and purged of all impurities by passing through muslin, &c. The air, when exhausted of its freshness, made its exit through the ladies' gallery by a grating behind the seats of the occupants, and was conveyed away through a tower and chimney. The ladies' gallery was absolutely the ventilator of the House of Commons.

Mr. TURNER seconded the vote, and said the system at the House of Commons was more elaborate than Mr. Gotch had stated. Air was propelled into the House by fans, and passed out of the Victoria Tower.

Mr. W. H. PRATT thought sufficient cubical contents were too seldom allowed in buildings, especially in churches. He questioned whether it was not a mistake to enclose extracting ventilators in turrets, and did not detract from their efficiency. He thought it was too often made the excuse to get a turret.

Mr. STOKES said the proper principle was to force in a constant supply of warm air. It would find a way out of itself. If they must have an extractor, it should be by way of a safety-valve.

Mr. C. O. ELLISON objected to stoves, because the warm air given off was deleterious if the stoves had any amount of iron surface unprotected by earthenware.

After remarks from Mr. Mountford and Mr. Blagrove, the vote was passed unanimously. Mr. Farrow replied, and the meeting adjourned.

## NEW CHEMICAL LABORATORY AT CAMBRIDGE.

THE plans for the new chemical laboratory, as designed by Mr. J. J. Stevenson, after consultation with Professor Liveing and Professor Dewar, have been approved by the Syndicate, who have issued the following description of the design:—

The proposed new chemical laboratory is designed to stand upon the site of the Perse Almshouses, opposite Pembroke College Lodge, and upon the west side of the Old Botanic Garden. The total length of the frontage from the corner of Free School Lane to the corner of Corn Exchange Street is 516 feet. Of this distance the proposed laboratory will occupy 200 feet, leaving 257 feet between its east end and the present buildings of the School of Human Anatomy.

This site is peculiar, and has entailed some peculiarities in the architectural treatment of the proposed new building. In the first place there is a bend in the line of the street opposite the master's lodge of Pembroke College, which it is impossible to rectify in the new building without a great sacrifice of space on account of the small depth of the ground on which the Perse Almshouses stand. In the next place, it is not possible to put up buildings of more than a very moderate height on the

side next Free School Lane without interfering with the ancient lights of the Perse Grammar School. It is proposed, therefore, to occupy this part of the ground with a large lecture-room and with a porter's lodge, neither of which need be of a lofty elevation. The principal building is connected with this wing at the point where the bend in the street occurs, and the front of it extends eastward about 100 feet, overlapping the new buildings of Pembroke College on the opposite side of the street to about one-third of their length. A one-storeyed wing extends from this in a northerly direction towards the mathematical and botanical lecture-rooms.

The basement is sunk about 5 feet below the level of the street. It extends under the whole building, and in it are provided—beneath the lecture-room, an unpacking-room and two store-rooms adjoining; beneath the main building, a large room, for a metallurgical laboratory and a furnace-room; adjoining it a room for organic analysis and one for such operations as the heating of substances under pressure, a large room 41 feet by 23 feet, to contain a steam-engine, dynamo-electric machines and other machinery, also a lavatory and cloak-room. In the rear of the machine-room is the boiler-room, capable of holding boilers to supply steam for heating the whole building as well as for the steam-engine. Underneath the northern wing are two rooms which are to be fixed with unflammable materials, where such operations as the distillation of ether and other easily ignited substances can be carried on, a small laboratory where a special class of students can work, a store-room, a lavatory, and a small chamber with windows all round it, where experiments with such substances as chlorine or bromine can be carried on.

On the ground-floor the large lecture-room is 40 feet square, and will seat 204 persons on benches rising towards the back. It is 30 feet high to the ceiling. Adjoining the lecture-room and communicating with it behind the lecture-table are the preparation-room and the specimen-room, which are also provided with independent access to the yard and to the store-rooms below, and to a private laboratory and balance-room above. These rooms also serve for the use of two smaller lecture-rooms which adjoin them on the east side. The lecture-room will be connected for the purpose of ventilation with the general ventilating shaft in the middle of the building, and will be provided with a separate draft-chamber for lecture experiments.

The principal entrance to the main building is from Pembroke Street. A rise of fourteen steps from the pavement reaches the entrance-hall on the level of the ground-floor, whence access is had to the two smaller lecture-rooms, each 29 feet by 24 feet, and to the principal range of students' laboratories. The ventilation of the rooms will be provided by means of a ventilating-shaft carried to a height of 100 feet, heated in winter by the fires of the steam boilers, or by a separate fire. In one corner of the large laboratory a small chamber similar to that in the basement, ventilated by windows all round, will serve for operations with chlorine. The balance-room opens through a lobby into the central room, and into the advanced students' laboratory. A closet for sulphuretted hydrogen is placed next the ventilating-shaft and ventilated thereby. Lifts place the laboratories in communication with the store-rooms below. The floors are of wood. The drains are formed of iron troughs lined with asphalt, carried between the joists beneath the level of the floor, covered with movable boards.

On the first floor are two rooms of the same dimensions as the small lecture-rooms on the ground-floor, of which one may be used as a professor's laboratory and the other as a classroom. These rooms also communicate with the private laboratory above the preparation-room. On this floor is also a second range of students' laboratories, consisting of two laboratories and a balance-room of the same dimensions as the rooms below, and another private room for a professor. The largest of the rooms on the ground-floor is not carried higher, but in the attic over it is a large space which may be utilised for some purposes, and the central part of the roof is flat, so that on it such experiments as are best carried out in the open air can be conducted. In the attic there is a considerable space, of which part may be appropriated to chambers for the assistants, and the rest will be available for making and stowing diagrams for spectroscopic observations, and for other purposes which do not require any special appropriations. It is calculated that the students' laboratories will accommodate 175 students working at one time, and if further extension should be required hereafter it can be attained by putting another floor above the northern one-storeyed wing. This would provide room for about 75 more.

The architecture has been throughout subordinated to the necessities and convenience of the building. The first requirements of the building are ample light and thorough ventilation, for which the large windows, divided by stone mullions, are very suitable. This form of window has also the advantage that it permits the irregular arrangement of the floors necessitated by the plan without breaking up the regularity of the



front. To allow the light to reach well into the rooms, the windows are kept square at the top and close to the ceiling, except in the lecture-hall, where round arched windows—which, however, give ample light—seem to be demanded by the architecture.

An approximate estimate has been made of the cost of the building, which, including heating apparatus, comes to 22,000*l.* The usual commission for architect and surveyor and clerk of the works' wages would add between 1,600*l.* and 1,700*l.*, and the special fittings and machinery necessary to a laboratory of this size cannot be estimated at less than 7,000*l.*, making the amount in all 30,700*l.* This sum leaves no margin for contingencies, such as extra foundations, which, from the nature of the site, may possibly be more costly than usual.

## ORNAMENTATION OF WORKS IN IRON.

AN ordinary meeting of the Civil and Mechanical Engineers Society was held on the 14th inst., the president, Mr. Thomas Cole, in the chair, when a paper on the "Appropriate Ornamentation of Works in Iron" was read by Mr. G. Richards Julian, A.R.I.B.A. The author said that if this problem was to be solved at all, it must be done either by the united efforts of the engineer and the architect, or by the development of a new species of workers, who might be denominated artist engineers. The application of artistic principles to the design of structural ironwork had been delayed by the very rapid spread of the use of the materials; the designing had been done in a hurry, and all the real thought had been bestowed on the scientific side of the question. Directly engineering attempted to do anything more than erect structures of simple utility, directly a curve or a moulding was added for the purpose of pleasing the eye, it became amenable to the same artistic laws as architectural design. Mr. Julian then stated those artistic principles which appeared to apply especially to the subject; the avoidance of falsehood either by direct imitation of other materials, or by imitation of forms of ornamentation appropriate to other materials, or by the use of sham constructive features. The modes of expression of proportion, harmony, and contrast were described, and the value of refinement pointed out. These principles were then applied to the design of the coverings of concealed ironwork in fireproof buildings and visible ironwork, both wrought and cast. Attention was specially directed to the ornamental treatment of stanchions as opposed to columns, and to the foliated ornament of Early Greek and of Byzantine work, as possessing the characteristics of crispness and sharpness of outline which should accompany low relief.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

## STEELE'S CHARACTER OF SIR CHRISTOPHER WREN.

The fifty-second number of the *Tatler*, which appeared on August 9, 1709, and was composed in White's Chocolate House, contained the history of the beauteous Delamira, and from it "Mr. Bickerstaff" was led to consider the subject of modesty in men. He came to the conclusion that the Frenchman was right in saying that modesty is to the other virtues in a man what shade in a picture is to the parts of the thing represented. It makes all those beauties conspicuous which would otherwise be but a wild heap of colours. This shade in our actions, said the moralist, must therefore be very justly applied, for if there be too much it hides our good qualities instead of showing them to advantage. As the most striking example of the dangers of an excessive modesty and reticence about one's own merits, Steele referred to the career of "Nestor," or, in other words, to Sir Christopher Wren, who was then an old man of seventy-seven, of whom he drew the following picture:—

"Nestor in Athens was an unhappy instance of this truth; for he was not only in his profession the greatest man of that age, but had given more proofs of it than any other man ever did; yet for want of that natural freedom and audacity which is necessary in commerce with men, his personal modesty overthrew all his public actions. Nestor was in those days a skilful architect, and in a manner the inventor of the use of mechanic powers, which he brought to so great perfection that he knew to an atom what foundation would bear such a superstructure. And they record of him that he was so prodigiously exact that for the experiment-sake he built an edifice of great beauty and seeming strength, but contrived so as to bear only its own

weight and not to admit the addition of the least particle. This building was beheld with much admiration by all the *virtuosi* of that time; but fell down with no other pressure but the settling of a wren upon the top of it. Yet Nestor's modesty was such that his art and skill were soon disregarded for want of that manner with which men of the world support and assert the merit of their own performances. Soon after this instance of his art, Athens was, by the treachery of its enemies, burnt to the ground. This gave Nestor the greatest occasion that ever builder had to render his name immortal, and his person venerable. For all the new city rose according to his disposition, and all the monuments of the glories and distresses of that people were erected by that sole artist. Nay, all their temples, as well as houses, were the effects of his study and labour, inasmuch that it was said by an old sage, 'Sure, Nestor will now be famous, for the habitations of gods, as well as men, are built by his contrivance.' But this bashful quality still put a damp upon his great knowledge, which has as fatal an effect upon men's reputations as poverty; for as it was said the poor man saved the city, and the poor man's labour was forgot, so here we find the modest man built the city, and the modest man's skill was unknown. Thus we see every man is the maker of his own fortune, and, what is very odd to consider, he must in some measure be the trumpet of his fame. Not that men are to be tolerated who directly praise themselves, but they are to be endued with a sort of defensive eloquence, by which they shall be always capable of expressing the rules and arts by which they govern themselves."

When alluding to the edifice which bore its own weight, Steele probably had in view the flat roof of the Sheldonian Theatre at Oxford, measuring 80 feet by 70 feet, and in which Wren dispensed with columns. The object of the apologue in the *Tatler* was to support the architect in his struggle against the Commissioners, who wished to deprive him of the greater part of his modest salary of 200*l.* for superintending the works at St. Paul's. It would have been risky for Steele to be more outspoken, for he held the offices of Gazetteer and Gentleman Usher. Wren was paid the balance that was owing to him in 1711, and he lived until 1723.

## AN ITALIAN PAINTER'S INDENTURE.

It was a common practice in Italy, in the fifteenth and sixteenth centuries, to place a boy who was considered likely to become a good artist under the care of a master who lived in a distant town. Raphael, for instance, came to Perugia from Urbino. The document that is published below throws a light on the conditions of apprenticeship in cases of the kind. Bartolommeo, or Baccio della Porta, who was one of the four great painters of the Florentine school, was impressed by the eloquence of Savonarola. He was present among the Piagnoni when the attack was made on the reformer, and was so frightened at the bloodshed that he resolved, if his life were spared, to become a friar. Porta had a younger brother, to whom he made over his property and patrimony. During the novitiate of Porta the care of Pietro was undertaken by the Prior of St. Mark's Convent. When it was supposed that the younger brother had artistic ability he was placed with Mariotto Albertinelli, the painter, who had been a fellow-pupil and a partner of Fra Bartolommeo. The following is the apprenticeship deed, which probably was based on a form that was more common in the fifteenth than in the nineteenth century:—

*Contract between Fra Bartolommeo della Porta and Mariotto Albertinelli, by which the latter binds himself to administer the property of Pietro del Fattorino, and to teach him the art of painting.*

January 1st, 1505.—Be it known to all who will see or read these presents, that Fra Santi of Lucca, O.S.D., and now prior in the convent of S. Marco in Florence, has bound Piero di Paolo to Mariotto, son of Biagio, for the term of six years, commencing on the 1st of January, 1505, and terminating on the 1st of January, 1511. And it is agreed and stipulated between said Prior and said Mariotto that the latter shall teach Pietro the art of painting, laying on gold, &c.; and that Pietro shall in all things prove his obedience to said Mariotto, without any remuneration or reward from said master during the term of six years. And the aforesaid parties are agreed that all the property inherited by said Pietro from Paolo, son of Jacopo (del Fattorino), shall be administered, preserved, and turned to the best advantage by Mariotto, who binds himself to take diligent care of said property, providing, like a good and faithful administrator, that it shall sustain no detriment. All this property shall belong to Mariotto during the term of six years; and he shall be empowered to receive all its fruits and rents during said term. The property is hereinafter described, to wit:—A house, situated in the parish of S. Pietro Gattolini, and a vineyard, together with other pieces of arable ground in said parish; and another vineyard and some lots of ground



and woods in Val di Neve, together with one hundred and eleven florins, at seven per cent, now in the bank of the commune at Florence. And said Mariotto binds himself to lodge and diet said Pietro in his own house, and to shoe and clothe him according to his condition. And provided Pietro should ask Mariotto for money, he shall not be bound to advance him more than seven soldi per month. But in case Pietro should not ask him for money, said Mariotto shall not be bound to give it or to make it good to him at the expiration of said term. Said Mariotto, moreover, shall be bound to have an office celebrated for the repose of the soul of Paolo (del Fattorino) each year in the church of S. Pietro Gattolini, and he shall be bound to give the priest the sum of two lire and two pounds of wax candles, according to ancient usage. And the aforesaid parties have agreed that all the parties having claims on, or indebted to, said property shall apply to said Mariotto in order to receive what may be due to them, or to pay what they may owe according to the pleasure of Mariotto, who, as a good and faithful administrator, will keep an accurate account of all payments and disbursements, and give satisfaction for same after the expiration of six years. And they are also agreed that Mariotto shall receive as much money from the debtors as may be required for the clothing of Pietro, the improvement of his land, and the repairs of his house in Val di Neve. And in case Mariotto should not be able to raise so much money as would be required for these purposes, he shall expend thereon his own money, for which he shall be indemnified at the termination of six years, as it shall seem good to the then prior of S. Marco in Florence. And in case that Mariotto or his heirs should not think well of retaining said Pietro, he shall be at liberty to dismiss him on the aforesaid conditions; and should said Pietro wish to leave the tutelage of Mariotto or his house, without completing the term of six years, said Pietro shall be bound to indemnify Mariotto according to the adjudication of whoever may be the prior of S. Marco in Florence at the period. This provision has been made lest Pietro should malign said Mariotto, or have learned the art of painting too quickly, for it is only just that said Mariotto should be indemnified for the time and labour which he undertakes to devote to teaching Pietro. Moreover, said Pietro, with the consent of said prior, and in presence of Fra Bartolommeo, his brother, agrees in case he should leave Mariotto or his house either before or after the expiration of said term (six years) that he shall not be empowered to let the vineyard situate in Val di Neve to any other than said Mariotto at a reasonable valuation. And it is provided also that in case he should be disposed to sell said vineyard, he shall not be empowered to sell it to any other than the said Mariotto, for a sum to be determined by four men of the district. And in case Pietro should die without natural or legitimate children within the term of six years, or after the expiration of the same, whosoever inherits said vineyard shall be bound to sell it to Mariotto, or his heirs, for a reasonable consideration. And as to Mariotto and his heirs, should he or they be disinclined to purchase the said vineyard, it shall be optional with them to sell or retain it, as they may think fit. And it is also provided if anything should occur within this period involving Mariotto or Pietro in any heavy loss, that the whole matter shall be submitted to the actual prior, and that he shall be empowered to introduce additional clauses in order to make good said loss. Mariotto and Pietro shall agree to all these conditions, and oblige themselves to the observance of the same in all and every particular, and the prior of St. Marco attests all this with his own sign manual. Mariotto, Pietro, and his brother, Fra Bartolommeo, shall subscribe with their own hands said conditions; and there shall be made two copies of this instrument, one of which shall remain with the aforesaid Mariotto, and the other with the Syndic of the convent of St. Marco.

I, Niccolo di Piero, at the instance of the aforesaid parties, have signed this instrument, January 1st, 1505, and they shall subscribe their names at foot of same. I, Fra Santi Pagnini, now prior of St. Marco, in Florence, by virtue of the authority given me by Fra Bartolommeo over his brother, Pietro, when he transferred his heritage to him, consent to and promise to enforce the observance of the aforesaid conditions. And I here sign my own name in said year, month, and day. I, Fra Bartolommeo, brother of Pietro, pledge myself to the said arrangements, and I hold that Pietro is bound to the same. Wherefore I put my signature to this on said day and month. I, Pietro di Paolo (del Fattorino), pledge myself to the observance of all said stipulations, and I bind myself to observe all that has been agreed upon between said prior and Mariotto. This I have done with the consent and at the instance of my brother, Fra Bartolommeo, and have put my signature thereto on this 1st of January, 1505. I, Mariotto, son of Biagio, painter, with the permission of my father, hold myself bound by said provisions, and hereunto append my signature. My father shall also subscribe same. I, Biagio, agree to the said conditions, and oblige my son, Mariotto, to the observance of the same, and I here append my own sign manual.

As is not unusual with lawyers' work, the foregoing deed

was not of much use to the parties concerned. Mariotto, although an excellent painter, had a good deal of the Bohemian about him. The relation between him and his pupil was soon dissolved, and the Historic Muse has not troubled herself with the fate of Pietro. But by one of those strange vicissitudes which mark Renaissance art history, the broken-down Mariotto and the friar once more became partners. When the partnership was dissolved, in consequence of Mariotto's preference for tavern-keeping, there was a division of the property in the studio, and from the inventory we find that lay figures were then used.

### SCHOOL BUILDINGS.

**Cardiff.**—The Higher Grade School, which has been erected from the designs of Messrs. James, Seward & Thomas, of Cardiff, has been completed, and informally opened. The style may be described as English Renaissance. The front elevation, which is about 150 feet in length, shows a central block, surmounted by a turret, rising to a height of about 70 feet, a central pediment, and a gable on either side. The chief material is local fire-brick of yellow tint, the mortar joints red; the dressings are of Bath stone, interspersed with grey Bridgend stone and courses of red brick. The roof is composed of green slate, finished with red tile crests. The works have not exceeded the amount of the original contract price, 9,200*l.* The contractor is Mr. C. Burton, of Cardiff.

**High Wycombe.**—New school-rooms have been erected, and were on Sunday the 11th inst. formally opened in connection with the Union chapel, High Wycombe. The buildings comprise school-room, 50 feet by 24 feet, with lavatories, out-buildings, &c., and the construction out of the old school buildings of six class-rooms, large organ and choir chamber at the rear of the pulpit platform. The galleries and part of the building have been repaired, and the whole decorated, at an expense of about 1,200*l.*, by Mr. G. H. Gibson, contractor, High Wycombe, under the direction of Mr. Arthur Vernon, of 26 Great George Street, Westminster, and High Wycombe.

**Middlesbrough.**—The Board schools erected in Newport Road have been opened. The schools have been built by Mr. Jos. Lord, from the designs of Mr. W. H. Blessley, in Queen Anne style of architecture, and will accommodate 978 children, 284 in the boys department, 284 in the girls, and 410 infants. Each department is furnished with three class-rooms and a school-room. The cost of erecting and furnishing is 7,036*l.* 19*s.* 6*d.*, and the total cost will be close on 10,000*l.*, averaging about 10*l.* per child accommodated.

**Wooburn Green, Bucks.**—A large class-room has just been added to the National School, Wooburn, of brick, flint, and slate, and an ornamental Early English fountain has been erected for the accommodation both of the children and passers-by. The builder was Mr. C. H. Hunt, and the architect Mr. Arthur Vernon, High Wycombe.

**Wycombe Marsh, Bucks.**—New National Schools in connection with St. Anne's Church have just been completed and opened. They contain a large room and class-room, and are constructed in the Early Gothic style, with red bricks and dark tiles. The outlay for 100 scholars has been 350*l.*, Mr. W. R. Loosley, of High Wycombe, having been the contractor, and Mr. Arthur Vernon, of 26 Great George Street, Westminster, and High Wycombe, the architect.

### NEW BUILDINGS.

**Belfast.**—The new Ulster Reform Club has been informally opened. The contract for the building and most of the interior finishing has been carried out by Mr. James Henry, of Belfast, under the plans and superintendence of the architects, Messrs. Maxwell & Tuke, of Manchester.

**High Wycombe.**—The useful Cottage Hospital of this town has been recently enlarged from the accommodation of twelve to sixteen beds, a new ward having been constructed, called the Augusta Ward, from the gift of 100*l.* made by her family in memory of the late Lady Carrington. The builder was Mr. J. T. Harris, and the architect Mr. Arthur Vernon, both of High Wycombe.

**The Aberdeen University Authorities** propose to enlarge Mareschal College, to meet the requirements of the medical school, either by the erection of buildings which will complete the present imperfect quadrangle, or by converting Greyfriars Church into a college hall.

**The Bournemouth Improvement Commissioners** on Tuesday decided to carry out a scheme for an undercliff carriage drive and promenade, upwards of two miles in length, along the whole of the sea frontage. The scheme has been estimated to cost about 25,000*l.* It is also in contemplation to construct new landing-piers at Boscombe and Southbourne, two suburbs.





### Semper's Theory of Evolution and its Practical Utility Illustrated.

SIR,—From Professor Baldwin Brown's letter of Dec. 31 we find that, according to Semper, the art of architecture was from the first an art of expression, just like poetry, and revelled in masking prosaic realities; "for the smoke of the carnival taper," says he, "is the true atmosphere of art." That Semper is not singular in this conception of architecture I admit, for the great French architect Duban defined his art *une décoration construite*; still this is Semper's teaching, which differs essentially therein from those who consider architecture as the handmaid to utilitarian purposes.

The drawings I beg to present as illustrations\* of the practical influence of Semper's teaching are from alterations which I made some years ago to the house No. 3 Queen Anne's Gate, now occupied by Lord Brabourne. The house I had to deal with consisted of the parallelogram which now forms the front part of the building. The storeys were low, the floors were rickety, the centre was occupied by a shabby dog-legged staircase, the exterior consisted of plain walls, with window openings as ornate and proportionable as those of a vagrant ward; the view to the north looked out into a gloomy street, to the west it enjoyed Little Carteret Street, enlivened by various mews; to the south it overlooked the back courts of Little Dartmouth Street. The job seemed as unpromising as it well could be, but yet it did not damp the courage of Semper's pupil, who only saw in all these miserable surroundings a stronger reason for changing the place into an ideal scene, which should be its own picture. The old staircase was cleared away, and its place was taken by a small entrance-hall covered with a low cupola, and paved with a marble mosaic. Then follows an inner hall with a slightly coffered ceiling, doors and finishings in oak, which give it a warmer appearance than the entrance-hall. From here starts the grand staircase, which the visitor ascends under a delicate cupola, and discovers at every step new and unexpected vistas. A balcony opens out from the drawing-rooms as a place of vantage to contemplate the gay throng, "*à la Paul Veronese*," which it was hoped would one day animate this staircase as the beautiful ladies and their brilliant cavaliers passed on from the upstairs ball-rooms to the festive board provided in the dining-rooms downstairs. The whole conception smells, as Semper defines art, of the carnival taper; it is an attempt at a poem in bricks and mortar. Does it pay? My client could best answer that question, but we can guess his opinion by the fact that he has employed me again since, and recommended me to his friends. The utilitarians forget that our wants are not solely physical, and this leads them into many a mistake both in art and in politics.

My second claim for Semper's teaching is that it enfranchises his followers from the tyrannical trammels of precedents; and whatever may be "*Cui Bono*'s" opinion on my work, he may like it or abhor it, but he cannot refuse that the architecture of this house is a specimen of Classic style treated with remarkable freedom of handling. If we limit our observations to the porch only, we shall find a Doric order eight and a quarter or nearly ten diameters high, according to how we measure it, instead of the legal seven or seven and a half of Palladio, surmounted by a most capricious-looking entablature; instead of the regulation Doric bases the shafts of the columns spread out, and the scrapers below them fulfil the functions of the missing bases.

It remains to be shown that this composition is the outcome of Semper's teaching, that it is not a caprice, but the result of meditations on the origins of art, and the various meanings of every feature we employ in architecture.

I must begin by explaining that I was not free in the selection of the general proportions of this porch. My client, a lover of old work, wished to preserve both the entrance door and the woodwork of the window above in the first floor, and only decided when nearly all the work was completed on having a porch at all. The problem to be solved was, therefore, given certain proportions, more or less disagreeable, render them less so—a problem which racks the brain of many a lady when she is selecting the bonnet or the dress which shall suit her best. Let her, if she be short, avoid flounces; if she be tall, let her beware of vertical lines and stripes.

The weak point of all porches, especially when added to a perfectly plain building, is to look entirely disconnected from the building itself. To avoid this reproach, I treated both the porch and the window above it as an architectural composition in stone inserted in the brickwork, and characterised it as part of the wall by emphasising the stone courses: so far there is nothing very new. The distance between the wall pilasters and

the columns is 3 feet, the distance between the two front columns is 8 feet. It is therefore evident that an architrave which would not be too heavy, but only of the proper proportion to bridge the space between the pilaster and the column, would prove much too slight when spanning the opening between the columns. I overcame this difficulty by, firstly, adopting as depth of the entablature a dimension which appeared sufficient for a stone to span safely the larger opening between the front columns, then I carried a stone beam from each column to the wall. The lower part of these beams are treated as architraves, the horizontal facias of which so well symbolise their elastic functions, like the fibres of wood. The architraves have the depth which seemed to me in proportion with the smaller openings spanned; what remained above the top architrave moulding I treated as a frieze, and to strongly mark that this part is not necessary to the bearing qualities of the stone, it is covered with vertical flutings, which destroy all idea of continuity in this surface. In the part of the entablature which faces the street I inserted circular bosses, which destroy the continuous line of the architrave, and obtained thereby a double result; firstly, an apparent shortening of the span for the same reason that flounces diminish the height of a lady; secondly, the continuity of the architrave being destroyed, the eye is obliged to take in the whole of the entablature as the elastic bearer between the two columns, and therefore is satisfied as to its solidity. I beg to point out that without any precedent known to me, I have ventured to carry out exactly in stone the very construction such framing would have if the entablature had been formed of wooden beams. The side beams project beyond the front beam, and thereby disguise an ugly joint; this is true to the precept of Semper when speaking of the artistic importance of seams. They teach us to make a virtue of necessity, in other words, to make the unavoidable constructional requirement the very motive of your artistic composition, as is seen in the seams of Oriental leather wares. I have also obtained another advantage by this marked difference of treatment between the sides and the front of the porch. I have emphasised the idea that this porch is only entered in front, and differs thereby from porches which are entered on all sides. This is also a refinement of feeling to which I have been awakened by Semper's teaching, for he consecrates many a chapter of his book to pointing out how we should indicate the direction of things according to their use.

Semper tells us that architecture has two ways of arranging transitions. In the Ionic temple, the passage from one feature to another is emphasised by a moulding which separates the two parts; such is the top moulding of the Ionic, and also of the Corinthian architrave. In Doric work we find features which we can call preludes, analogous to preludes in music: such are the guttæ under the triglyphs. It is evident that if we had never seen a Doric temple, but only found a piece of an architrave, we should have been sorely puzzled by these guttæ recurring at regular intervals, and probably we should have come to the conclusion that something was fitted over them. We see thereby that preludes connect all parts of a composition together more powerfully than transitions, or say mouldings; for, with preludes, each part is itself imperfect, and cannot even be conceived as an independent object. This is the consideration which has induced me to treat the scrapers and the plinths as forming the moulded bases of the columns they support; the very hollow of the scraper itself emphasises the elastic reactions of these bases and must be considered as part of the column, which, in that case would be nine and three-quarter diameters high.

Purists will find fault with the bands which cut up the shafts of the columns. If we interrogate Semper, we shall find there are two elements of form: the one is the purpose, the other is the material we have in hand. I admit that the ideal of a column is to have one continuous outline from base to cap, and that such should be its treatment when formed out of marble, or such fine-grained materials as allow of sharp outlines; but I had to deal with Bath stone, the edges of which are always more or less rugged. Flowing lines with or without flutings would have been imperfect: by breaking them up I believe I have adopted a style proper to the coarse material I had to employ, just as, according to Semper, before the discovery of the potters' wheel, when vases were modelled by hand only, the makers disguised the imperfection of their general form by covering them with ornaments in bold relief.

I have now made a clean breast of the motives which guide my designing, and hope "*Cui Bono*" will admit that the study of Semper may have great influence on the work of an artist, although he is quite free to utterly condemn the result.

I beg to warn my colleagues against considering the architecture employed in this house as a specimen of Semper's own style, or even of my style. It is simply the application by myself of Semper's principles to a special case; but any architecture whatever can be adopted, and yet be thoroughly Semperian. A Gothic architect, for instance, has only to throw aside all archaeological crazes, and, by dint of careful study of old and modern buildings, find out the full artistic value of

\* See Illustrations.



every feature of Gothic work, then use them freely as the words of a language in which he writes his own ideas, in harmony with his personal feelings, the wants of his fellow-men and the materials as well as the scientific knowledge we now possess, and this Gothic architect will be a Semperite, even if he has never heard of Semper, just as there may be many a true Christian amongst the savages of Central Africa, loving his fellow-men as Christ has ordained, although they have never had the advantage of hearing either His name or His doctrine.

LAWRENCE HARVEY, A.R.I.B.A.,

Pupil of the late Professor Semper, Medallist of the Paris Ecole des Beaux-Arts.

#### Semper and Semperism.

SIR,—If you and your readers are not already tired of this subject, I hope you will allow me space for a few words of reply to your correspondent on "Utilitarianism in Education."

In the first place, Semper's book on "Style" is not about architecture as the building art so much as about the decorative arts, which are subordinate to it. The book makes no pretence to supply a set of rules for the erection of buildings. What it offers is a systematic treatment of the subject of ornament, and copious illustrations of decorative principles drawn from the great works of the past. With these are joined discussions and suggestions relating to the history and philosophy of the arts, which to the non-technical reader make the chief interest of the work. Now, with regard to the "use" of all this, of course no one ever supposed that opinions as to the primal origin of architecture have the least effect upon the practical work of an architect of to-day. Such questions may naturally have a special interest for architects, just as questions on the theory of musical effect interest the musician; but in neither case is practice in the least influenced. These views and observations of Semper, which occur throughout his work, but form only a small portion of it, have their value quite apart from any effect on the construction of modern buildings or on the art of capturing clients, and this value is sufficiently proved by the constant expressions of indebtedness to Semper which are to be found in recent works dealing with the subjects on which he wrote. The case is different with Semper's treatment of "style in the arts." Here there is no possibility of denying the practical value of his work. I do not hesitate to say that an acquaintance with Semper would "increase a student's powers, and enable him to design better buildings." It would do so not by explaining construction or entering into technical questions, but by educating his artistic taste, and rendering him familiar with the great masterpieces of old time. No doubt Semper, as himself a practical architect who carried out many important buildings, was as much at home in "the strength of materials" as in matters artistic, and his pupils will know what was the value of his technical teaching. "Der Styl" deals with the artistic side of the architect's work, and not so much with the planning as with the decorative treatment of buildings. In these matters his teaching seems to me singularly able and practical, and to have nothing at all of the "ism" about it. It is not, as I mentioned in a former letter, specially original, and demands the swallowing of no special theory.

It will evidently be a surprise to "Cui Bono" to hear it stated that Semper, though a foreigner and a professor, was not a doctrinaire, and that his "rigorous system" exists nowhere out of "Cui Bono's" imagination. Mr. Lawrence Harvey, who knows much more about Semper than I do, has told us, on his personal authority as an old pupil, that Semper's teaching "leads to liberty," and has given no ground at all for your correspondent's supposition that this liberty was only to be reached through a reaction from the master's actual influence. I know Semper only from his published writings and the various records of his work in connection with the Science and Art Department, and I have gathered from these that he was a teacher who desired, above all things, to call out the student's powers into independent exercise. His "system" seems to have consisted in impressing upon the learner the importance of realising clearly everything that he was doing. There should be a reason, he taught, for everything, and all the parts of a work should hang together, so that the whole becomes an organic unity. In order to enforce this practical principle, Semper surveyed the previous history of the arts, and by showing how the decorative forms used in various styles originated, and how they were employed by the masters of old, took them at once out of the region of mere caprice and fashion.

"Cui Bono" doubtless believes in a more excellent way, and imagines, as he tells us, the builder of the future erecting his economical and convenient structures strictly on builders' principles, and then offering to his client as a luxury for after consideration, "as much ornament as he wishes." He seems to think that public taste is rapidly deteriorating down to a point when architecture will cease to be looked upon as a fine art. I fancy, however, that it will be long before he gets the public on his side. I prefer to believe that the public taste is advancing

in the direction of better things, and that everything which spreads a knowledge of art and elevates taste by calling attention to the best models will be welcomed by both artists and the public. "Cui Bono" does not need to be told that in the decorative or industrial arts, with which Semper's "Style" chiefly deals, the workmen of this country have lost ground as compared with their foreign neighbours. The reason is the higher artistic quality of foreign productions, and this is due to the fact that foreign nations have not pooch-pooched their Sempers, but have cultivated a genuine interest in art by every means in their power. If in these branches of production we are to "bring back clients," it must be by encouraging by every means in our power the development of artistic taste, and not by listening to outcries against anything which seems a little systematic. By all means let books on the strength of materials be written and studied to the utmost possible extent. These belong to another and vitally important branch of the architect's work, one which the great builders of old fully understood. But excellence in this respect should go hand in hand with artistic excellence. To cry down the importance of the latter, as "Cui Bono" cries it down, is dishonouring to the profession to which I must presume he belongs. Let us learn all that is to be learned from engineering practice or from any other source, but let us not even in jest—and I cannot believe "Cui Bono" to be quite serious—attempt to lower the position of the art to which we owe the creation of monuments that are among the most precious possessions of the human race.

University of Edinburgh:

Jan. 19.

I am, &c.,

G. BALDWIN BROWN.

#### GENERAL.

**The Queen** has contributed 20*l.* towards the cost of renovation and reseating the Congregational Church at East Cowes.

**M. H. Fantin Latour**, of the Institute of Painters in Oil Colours, has received the Cross of the Order of Leopold.

**Prince Bismarck** has opposed the proposition to establish a normal working day in Germany.

**Mr. J. Charlton** having completed the equestrian portrait of Sir Nathaniel de Rothschild, commissioned by the tenant farmers and tradesmen of the Vale of Aylesbury, it has been presented to Lady N. de Rothschild.

**M. Vibert's** *Christian Martyrs* is now being exhibited in Manchester. The subject is not pleasing. It is a representation of two early converts left chained in a wilderness. The woman has been killed by a lion, and the man is about to share his companion's fate.

**The Bishop of Malaga** proposes to raffle three paintings, by Morales, Andrea del Sarto, and Ribera, in order to obtain money to defray part of the cost of rebuilding houses in the city which have been destroyed in the earthquake.

**Mr. James Bertwistle**, of Blackburn, has been appointed architect for the proposed St. John's Schools at Great Harwood, which are to accommodate 930 children.

**Sir Henry Bessemer** has been presented with the honorary freedom of the Company of Armourers and Braziers.

**The Royal Scottish Academy** will open its fifty-ninth annual exhibition on February 14.

**The Spring Exhibition of the Manchester Academy** will be opened to the public on February 11.

**The Exhibition of Pictures at Wolverhampton** closed on Saturday. The attendance during the two months it was open has not been encouraging to the promoters. The art gallery will be reopened when the works of art belonging to the town have been rearranged.

**Mr. John Holden, F.R.I.B.A.**, on Wednesday, gave a lecture on "Foundations and Materials," one of a series on house construction and sanitation, promoted by the Manchester and Salford Sanitary Association, at the Technical Institute, Manchester.

**Mr. T. M. Lindsay**, of Rugby, has lectured in Nottingham on "Etching, Mezzotint, and Aquatint."

**Mr. J. C. Clarke**, M.P. for Abingdon, proposes to build a cottage hospital in the town at his own expense.

**Messrs. T. Lawrence & Son** have supplied the red rubber bricks used in the new White Horse Cellar Hotel, Piccadilly.

**Mr. B. Priestley Shires** will read a paper on Thursday next, before the York Arts Guild, on "Domestic Life of the Edwardian Period as shown by the Architecture."

"**Sunlows**," near Kelso, the mansion of Mr. William Scott Kerr, has been destroyed by fire. The loss is estimated at from 25,000*l.* to 30,000*l.*

**Messrs. Godwin & Son**, of Lugwardine Tile Works, Withington, have offered as a gift the tiles to pave the portion of Whitecross Church, Hereford, already built.

**Mr. Joseph Cox**, the Borough Surveyor for Leominster, has just died in his 76th year.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JANUARY 24, 1885.

## AN AMATEUR BUILDER.

ON Saturday an action was taken by John Adams, a bricklayer, to recover compensation for personal injuries alleged to have been caused through the negligence of the defendant, Mr. Cox, of Portobello Road, London. It should be a warning to those who believe in the principle of "Every man his own builder." In September, 1883, the defendant wished to add a storey to a house, and being of a thrifty turn, resolved to dispense with a builder and to superintend the works himself. The plaintiff was employed to underpin a certain wall with Portland cement. Some navvies were engaged as well. It was afterwards discovered that the 9 feet underpinning was not of sufficient depth, and he (defendant) ordered the navvies to dig out another 18 inches preparatory to further pinning. On October 29 the plaintiff went there at 4 A.M. and found that the navvies had excavated the entire length of the wall, 18 inches below his original underpinning wall. The defendant was handing him bricks, and had only left about five minutes, saying, "Look sharp, as I expect the district surveyor." The plaintiff went down the cutting at once to continue the underpinning, when down came the whole wall. There was no means of escape, and he was knocked over by it and had his legs broken, and was in hospital fifteen weeks.

Medical evidence was given that both the plaintiff's legs had been broken, the fractures being of a very serious character. The jury found a verdict for the plaintiff—damages, 100*l*.

## BUILDERS' ACCOUNTS.

A CASE which was heard before Mr. Justice Wills on Saturday will suggest the necessity of precision in dealing with clients, and that receipts for money should be in writing and explanatory of the reasons for which the money was given. The defendant, Mr. Glashier, obtained a lease of a house on the Bedford Park Estate on condition that he executed certain repairs. He therefore entered into an agreement with Mr. Davey, the plaintiff, a builder, who executed the necessary repairs, and sent in his bill in accordance with the specification, and a further amount for extras. The defendant paid the amount incurred under the specification, but disputed (he said) on principle the amount claimed as extras. At an interview with the plaintiff's surveyor, the defendant's solicitor paid, by cheque, 44*l*. 2*s*. 6*d*., in full satisfaction, as he said, of the plaintiff's claim for extras. That this cheque had been so accepted the plaintiff maintained was incorrect, and that, in fact, it had been merely taken on account. It was admitted that the cheque had been cashed by the plaintiff. The plaintiff's case chiefly depended on the conversation which had taken place at the interview alluded to, the details of which, and the evidence thereon, were very complicated, the plaintiff contending that the cheque was merely accepted on account, while the defendant's solicitor contended that it was given in satisfaction. It appeared that

at this interview, and during the dispute, the defendant's solicitor had intimated that his client would not pay more than the 44*l*. odd, and was prepared to give the plaintiff a cheque for that sum at once, and that if he wanted the balance he would have to go to a jury for it. The cheque was thereupon taken by the plaintiff.

At the suggestion of Mr. Justice Wills, it was agreed to take the opinion of the jury on the question as to the payment being in satisfaction of the account.

Mr. Justice Wills, commenting on the interview between the parties' representatives, said there appeared to have been a *bonâ fide* dispute as to these extra charges, the defendant saying he disputed half the items thereof on principle; the remaining amount—viz. 44*l*.—he did not dispute, and said he would pay. As regarded the other sum, however, he said he refused to pay it. To facilitate a final settlement of the matter, and so avoid litigation, the defendant's solicitor had apparently done what in such cases their own experience would tell them was always done between gentlemen—viz. had stated the whole case without reserve, so that each disputant might see and realise what the case was for and against him. His lordship had always considered that in such cases any admissions that might be then made by either side were confidential and without prejudice. But in this case he was sorry to say this had not been so, and it had been sought, on behalf of the plaintiff, to set up such a class of evidence with a view of establishing his case. Such a course he could only designate as most shabby, and this instance was perhaps the shabbiest he had ever in his very long experience known, and it was deserving of general reprobation.

The jury found that the money was paid and received in satisfaction of the whole amount owing.

Mr. Justice Wills gave judgment, dismissing the action with costs.

## ARTESIAN BORING AT VANGE, ESSEX.

IT will be remembered that early last November Messrs. Legrand & Sutcliffe, of London, struck chalk in this boring at the depth of 524 feet, after passing through 395 feet of London clay and 129 feet of the lower tertiary beds. A further 201 feet has now been penetrated into the chalk, making the total depth reached 725 feet, and a sufficient supply of water has been obtained for the purpose of large local brickworks. A feature of interest is the peculiar nature of the chalk met with. As a rule, in the London basin it is generally considered that, unless water be found in the first 150 feet of chalk with the usual layers of flints, it is but little use boring deeper in search of a supply from the lower chalk. In this instance the first 150 feet was practically waterless, the character of the chalk partaking more of the nature of a stiff marl of a dark mottled colour, with scarcely any flints in it; and it was not until this bed had been passed through that regularly stratified layers of white chalk and flints appeared, and from which a supply of water was gradually

developed in the last 50 feet bored. The actual time occupied in boring the last 200 feet was only seven weeks.

## JAPANESE PAPER.

THAT Japanese paper is daily growing in public favour and appreciation is not surprising, considering the number of decorative purposes to which it can be applied, and its comparative cheapness. Some very fine specimens of this material may now be seen at the show-rooms of Mr. Robert Christie, 102 George Street, Portman Square, who has just received a large consignment, consisting of over one hundred new patterns, comprising among them some of the finest, as regards design and colouring, which have yet been introduced into this country.

## CHURCH FONT.

A HANDSOME font, complete with brass cover, has been presented to the new church of St. Agnes, Moseley, near Birmingham. It is of Caen stone, with quatrefoil marble columns, the carving of the capitals and that round the bowl being in the Early English style, in harmony with the architecture of the church. The work has been carried out by Messrs. Jones & Willis, of Birmingham and London, who also supplied the choir-stalls, chancel-rails, and gas-standards.

## AUCTION SUMMARY.

For the Week ending January 31.

TUESDAY, 27th:—

Mr. G. B. Smallpeice.—Freehold Building Land, Leytonstone.

THURSDAY, 29th:—

Messrs. Kidwell & Son.—Old Ship's Timber, Royal Dockyard, Chatham.

## COMPETITIONS OPEN.

CHELSEA.—Feb. 25.—Plans are invited for Additions to the Vestry Hall. Premiums of 100, 50, and 30 guineas. Mr. J. Elsdell Salway, Clerk of the Vestry, King's Road, Chelsea.

CROYDON.—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100*l*., 30*l*., and 25*l*. for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

LONGTON.—Feb. 20.—The Longton School Board are about to erect two sets of schools at Normacott and Florence, each to accommodate 700 scholars (220 boys, 220 girls, and 260 infants), and invite architects in the Potteries and Newcastle to send in designs and estimates. Mr. Geo. C. Kent, Clerk to the School Board, Longton.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.



## CONTRACTS OPEN.

ABERYSTWITH.—Jan. 31.—For Building House at Brongog. Mr. J. Middleton, Architect, Cheltenham.

ARBROATH.—Feb. 2.—For Reconstruction of Entrance to Wet Dock. Mr. W. D. Cay, C.E., 107A Princes Street, Edinburgh.

ALNWICK.—Jan. 22.—For Building Bakery and Flour Warehouse. Messrs. T. Dixon & Son, Bondgate Street, Alnwick.

ASHTON-ON-MERSEY.—Jan. 27.—For Leveling, Paving, Metalling, and Channelling Streets. Mr. A. McKenzie, Surveyor, Broomfield Road, Hale, near Altrincham.

ASHTON-UNDER-LYNE.—For Rebuilding Mill. Messrs. J. Eaton & Sons, Architects, Ashton-under-Lyne.

BALTINGLASS.—Jan. 27.—For Building Boundary Fence round the Killranelagh Graveyard. Mr. J. Ralph Dagg, Clerk to the Burial Board, Baltinglass.

BAMBER BRIDGE.—Jan. 26.—For Constructing Subway under Railway. The Engineer's Office, Hunt's Bank, Manchester.

BANGOR.—Jan. 26.—For Converting Buildings to College Purposes and Erection of Building Museum, &c. Mr. W. Cadwaladr Davies, University College, Bangor.

BANGOR.—Feb. 4.—For Building Villa. Mr. Owen Williams, Architect, Bangor.

BATLEY CARR.—Jan. 28.—For Building Warehouse, Weaving Shed, &c. Messrs. Kirk & Sons, Architects, Dewsbury.

BEDFORD.—Feb. 24.—For Plans and Specifications and Execution of Works in connection with Sewage Pumping at Outfall Works. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.

BEDWELTY.—Feb. 3.—For Building Cemetery Chapel, Caretaker's House, Boundary Walls, &c. Mr. G. A. Lundie, 14 The Parade, Tredegarville, Cardiff.

BURNLEY.—Jan. 28.—For Building Two Semi-detached Villas. Mr. A. Robinson, Architect, Hargreaves Street, Burnley.

BETHNAL GREEN.—Feb. 5.—For Construction of Brick Sewers in Queen's Road, Great Cambridge Street, &c., to Bethnal Green Road. The Engineer, Metropolitan Board of Works, Spring Gardens, S.W.

BLACKROCK.—Jan. 31.—For Construction of Disinfecting Hot-air Chamber. Mr. T. M. Porter, Secretary to the Commissioners, Town Hall, Blackrock, Dublin.

BURSLEM.—Jan. 31.—For Building the Haywood Hospital. Mr. George B. Ford, Architect, Burslem.

BURY.—Jan. 27.—For Construction (Labour only) of Brick Sewer, &c., Bridge Street. Mr. J. Cartwright, C.E., Borough Surveyor, Bury.

CHELSEA.—Jan. 28.—For Bridges to connect Infirmary with New Wing. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

DEWSBURY.—Jan. 28.—For Supply of Market Stalls, &c. The Borough Surveyor, Bond Street, Dewsbury.

DUNFERMLINE.—Jan. 28.—For Building March Dyke. Mr. John Landale, Dunfermline.

EDINBURGH.—Jan. 24.—For Cast-iron Pipes and Special Castings (70 Tons). Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

FARNWORTH.—Feb. 19.—For Construction of Bridge. Mr. W. Radford, 1 Princess Street, Manchester.

GOOLE.—Jan. 28.—For Building Ten Houses and Four Shops. Mr. H. B. Thorpe, Architect, Church Street, Goole.

HALIFAX.—Jan. 28.—For Carrying Out Street Improvement Works. Mr. Escott, Borough Engineer, Halifax.

HALIFAX.—Jan. 30.—For Building Three Houses, West Parade. Mr. Joseph Wilson, Architect, Queen's Road, Halifax.

HEADINGLEY.—Feb. 3.—For Building House. Mr. D. Dodgson, Architect, 16 Park Lane, Leeds.

INVERNESS.—Jan. 30.—For Building Railway Station. Mr. M. Patterson, Inverness.

LANCASTER.—Jan. 30.—For Alterations for Guardians. Mr. J. Parkinson, Architect, Market Street, Lancaster.

LIMERICK JUNCTION.—Feb. 4.—For Building Eight Cottages. Mr. Francis B. Ormsby, King's Bridge, Dublin.

LIVERPOOL.—Jan. 27.—For Recreation Ground, Shop, &c., Everton Brow. The City Engineer, Liverpool, W.

LONGFORD.—Feb. 10.—For Erection of Farm Buildings, &c. Mr. C. A. Owen, Architect, 16 Molesworth Street, Dublin.

LOUGHBOROUGH.—For Building School Chapel at Newhall. Mr. W. T. Hampton, Architect, 26 Regent Street, Loughborough.

MIDLAND RAILWAY.—Feb. 6.—For Alterations and Repairs to Nos. 36 and 37 Whitecross Street, London, and for Reconstruction (Ironwork) of Bridges at Croxall and Brooksby Stations. Mr. A. A. Langley, Engineer, Midland Railway, Derby.

NORHAM, BERWICK.—Feb. 4.—For Building Police Station. Mr. John Cresswell, County Architect, Moot Hall, Newcastle-on-Tyne.

NORTHAMPTON.—For Alterations and Additions to Conservative Club Premises, Gold Street. Mr. Edmund Law, Architect, Northampton.

NORTH DUBLIN.—Jan. 28.—For Nurse Accommodation at the Workhouse. Mr. Byrne, Architect, 52 Dame Street, Dublin.

NORTH-EASTERN RAILWAY.—Feb. 18.—For Building Passenger Station. Mr. Wm. Bell, Company's Architect, York.

ROCHESTER.—Jan. 27.—For Building Five Cells at Police Station. Mr. Wm. Banks, City Surveyor, Guildhall, Rochester.

SWANSEA.—Jan. 31.—For Additions to Herbert's Lodge. Messrs. Beor & Plant, York Place, Swansea.

THORNBY, WELFORD.—Jan. 30.—For Repairs to Red Lion Inn. Messrs. John Ingman & Son, Architects, Hazelwood Road, Northampton.

Established 1820.]

INTERNATIONAL HEALTH

3 Silver and 4 Bronze Medals

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EXHIBITION, 1884.

Awarded for Sanitary Appliances.

# HENRY CONOLLY,

LIMITED,  
MANUFACTURING SANITARY ENGINEERS,

Call the attention of Architects, Surveyors, and Builders to their Closets, the advantages of which will be readily seen by the accompanying Illustration.

## THE "SAFETY" VALVE WATER-CLOSET,

WITH

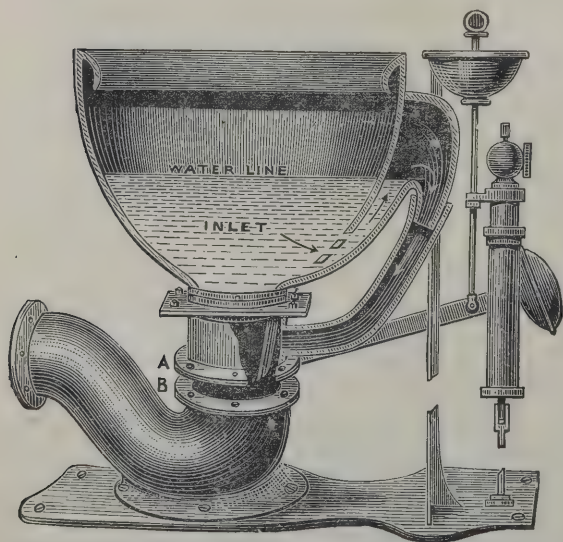
Conolly's Reversible Trap (Patent No. 3,754).

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "N stor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the india-rubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

CAN BE SEEN IN ACTION IN NEW SANITARY SHOW-ROOM.

53 & 55 Hampstead Road, 169 & 171 Drummond Street.  
WAREHOUSES—TOLMER'S SQUARE, N.W.





WARRINGTON.—Jan. 26.—For Cast and Wrought Ironwork in Extensions of Iron Roof of Market, and for Building Inspector's Office. Mr. T. Longdin, Borough Surveyor, Town Hall, Warrington.

WIDNES.—Jan. 28.—For Supplying a 10-Ton Steam Roller. Mr. James T. Allen, Clerk to the Local Board, Public Offices, Widnes.

\* \* See last week's issue of "The Architect" for a large number of Contracts still open.

## TENDERS.

## BALLINASLOE.

For Building Industrial School at the Convent, Ballinasloe. Mr. JAMES F. KEMPSTER, Architect, Ballinasloe. Quantities by the Architect.

|   |        |   |   |
|---|--------|---|---|
| Morris, Sligo . . . . .                   | £4,316 | 0 | 0 |
| Sweeny, Loughrea . . . . .                | 4,232  | 0 | 0 |
| T. & J. Pemberton, Dublin . . . . .       | 4,150  | 0 | 0 |
| Naughton, Ahascragh . . . . .             | 4,149  | 0 | 0 |
| Ward, Ballinasloe . . . . .               | 4,109  | 0 | 0 |
| J. Pemberton, Dublin . . . . .            | 4,100  | 0 | 0 |
| O'Brien, Ballinasloe . . . . .            | 4,025  | 0 | 0 |
| CONNELL, Ballinasloe (accepted) . . . . . | 3,785  | 0 | 0 |

## BIRMINGHAM.

For Building the Hen and Chickens Arcade, Birmingham.

LOVATT, Wolverhampton (accepted).

For Internal Decoration at Parish Offices, Birmingham.

MANN & Co. (accepted) . . . . . £350 0 0

## COLCHESTER.

For Erection of new Shops, &c., Long Wyre Street, Colchester. Mr. JAMES F. GOODEY, Architect, Colchester.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Eade . . . . .          | £1,050 | 0 | 0 |
| Oldridge . . . . .      | 1,047  | 0 | 0 |
| Ambrose . . . . .       | 1,041  | 0 | 0 |
| Diss . . . . .          | 995    | 0 | 0 |
| Everett & Son . . . . . | 915    | 0 | 0 |
| Dupont . . . . .        | 897    | 0 | 0 |
| Bowles . . . . .        | 890    | 0 | 0 |
| Chambers . . . . .      | 889    | 0 | 0 |

## SALES BY AUCTION.

FOY, MORGAN & CO. beg to announce that their Next PUBLIC AUCTION will take place on

WEDNESDAY, FEBRUARY 4, 1885,

at the BALTIMO SALE-ROOM, Threadneedle Street, E.C., when they will offer their usual assortment of DEALS, BATTENS, BOARDS, TIMBER, &c.

Catalogues will be issued in due time.

FOY, MORGAN & CO. {Wood Brokers, 108 Bishopsgate Street Within, E.C.

Leytonstone, close to the Station on the Great Eastern Railway.

MR. GEORGE B. SMALLPEICE has received instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, Bank, England, on Thursday, January 29, at Two precisely, FIFTEEN PLOTS of FREEHOLD BUILDING LAND, situate in the Fairlop, Fillebrook, and Bulwer Roads, with frontage amounting to 550 feet. Also the Freehold Residence in Fairlop Road, known as Albany Villa. The land is exceedingly well placed, within 20 minutes' ride of the Metropolis, to which there is a constant and regular service of trains; it is well adapted for the erection of villas of a superior description, and which, from their easy access, would readily command a desirable class of tenants. The residence may be obtained of C. B. Cooper, Esq., Solicitor, 40 Bedford Row, W.C.; at the Mart; and of George B. Smallpeice, Surveyor and Auctioneer, 9 and 10 Tokenhouse Yard, Littlebury, E.C.; and Guildford.

## VAUXHALL.

On the Albert Embankment, in close proximity to the river. A Freehold Building Site of about 12,500 square feet, with extensive frontages to the road and pathway of the Embankment, close to Messrs. Doulton's Potteries and other large factories, eminently suitable for the erection of a warehouse, Public Hall, or business premises requiring space and a prominent and commanding position unequalled in the district.

MESSRS. FAREBROTHER, ELLIS, CLARK & Co. are instructed to offer for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Thursday, February 12, 1885, at 2 o'clock, the above valuable FREEHOLD BUILDING SITE.

For particulars apply to H. E. Brown, Esq., Solicitor, 22 Great George Street, Westminster, S.W.; or to Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, and 18 Old Broad Street, E.C.

## BEXHILL-ON-SEA.

Between St. Leonard's and Eastbourne, with Railway Station on the Estate.

MESSRS. E. & H. LUMLEY beg to announce that the extensive improvement works which have been carried on at a cost of about £50,000 are now complete, and invite the attention of builders, contractors, and capitalists to the valuable sea frontage now ripe for buildings. Leases will be granted on easy terms, and every facility afforded for developing this very promising seaside town.

Plans and particulars may be obtained of Lumleys, agents to the freeholder, the Right Hon. Earl DE LA WARR, at 21 St. James's Street, Piccadilly, S.W.

## CROWTHORNE, BERKS, and BLACKWATER, HANTS.

H. J. E. BRAKE will SELL by AUCTION, at the Royal Swan Hotel, Blackwater, Hants, on Monday, February 9, 1885, at Four for Five o'clock in the afternoon, about 80 acres of valuable FREEHOLD LAND at Crowthorne, Berks (a portion of which is covered with thriving Fir Plantation), in plots from a quarter of an acre to 12 acres each, and a few choice plots with frontages to the main road suitable for shops; also three valuable Building Plots adjoining the Royal Swan Hotel, Blackwater. May be paid for by instalments.

Plans, particulars, and conditions of the Auctioneers, Farnborough, Hants.

## BEDFORD.

For Construction of Service Reservoir, Filter Beds, and Storage Tank, Bedford, for the Corporation of the Borough of Bedford. Mr. JOHN LUND, Engineer. Quantities by the Engineer.

## Entire Works.

|                                     |        |    |    |
|-------------------------------------|--------|----|----|
| Foster, Kempston . . . . .          | £4,984 | 0  | 0  |
| Laughton, Bedford . . . . .         | 4,664  | 2  | 11 |
| Bottoms Bros., Battersea . . . . .  | 4,620  | 3  | 0  |
| Ambrose & Son, Bath . . . . .       | 4,235  | 0  | 9  |
| Dickson, St. Albans . . . . .       | 4,050  | 0  | 0  |
| Cowdery & Sons, Newent . . . . .    | 4,137  | 4  | 6  |
| Ward, Leicester . . . . .           | 3,721  | 0  | 0  |
| Pilling & Co., Manchester . . . . . | 3,750  | 0  | 0  |
| Twelvrees, Biggleswade . . . . .    | 3,635  | 0  | 0  |
| White, Bedford . . . . .            | 3,630  | 0  | 0  |
| Cook & Co., Battersea . . . . .     | 3,945  | 10 | 6  |
| Clayson & Sons, Cooknoe . . . . .   | 3,758  | 0  | 0  |

| Brickwork.               |           | Carpentry. |  |
|--------------------------|-----------|------------|--|
| Mayfield . . . . .       | £979 12 2 | £14 0 11   |  |
| Laughton . . . . .       | 934 4 0   | 32 14 6    |  |
| Freeborough . . . . .    | 760 19 6  | 14 0 0     |  |
| Ambrose & Son . . . . .  | 699 11 11 | 12 7 4     |  |
| Cowdery & Sons . . . . . | 645 12 10 | 19 8 3     |  |
| Bottoms Bros. . . . .    | 642 12 4  | 10 10 0    |  |
| Cook & Co. . . . .       | 629 2 9   | 15 5 2     |  |
| Feary . . . . .          | 579 3 6   | 13 18 6    |  |
| Ward . . . . .           | 490 0 1   | 7 3 4      |  |
| Finnegan . . . . .       | 419 12 8  | 16 1 0     |  |
| Shortland & Co. . . . .  | *402 3 9  | *10 16 9   |  |

| Bricks.                            |           | Masonry. |  |
|------------------------------------|-----------|----------|--|
| Laughton . . . . .                 | 1,050 0 0 | 487 2 9  |  |
| Ambrose & Son . . . . .            | 962 10 0  | 421 2 10 |  |
| Cook & Co. . . . .                 | 950 0 0   | 382 7 5  |  |
| Cowdery & Sons . . . . .           | 925 0 0   | 456 5 4  |  |
| Finnegan . . . . .                 | 875 0 0   | 331 8 3  |  |
| Gamlingsay Brick Company . . . . . | 875 0 0   | —        |  |
| Page . . . . .                     | *868 15 0 | —        |  |
| Rixom & Co. . . . .                | 850 0 0   | —        |  |
| Ward . . . . .                     | 850 0 0   | 305 9 8  |  |
| Bottoms Bros. . . . .              | 812 10 0  | 573 16 3 |  |
| Shortland & Co. . . . .            | 625 0 0   | *183 5 5 |  |
| Feary . . . . .                    | —         | 782 11 2 |  |
| A Contractor . . . . .             | —         | 605 15 6 |  |
| Freeborough . . . . .              | —         | 500 0 0  |  |

\* Accepted.

## BEDFORD—continued.

| Earthwork.               |            | Lime and Cement. |  |
|--------------------------|------------|------------------|--|
| Bottoms Bros. . . . .    | 1,481 1 11 | 278 15 0         |  |
| Ward . . . . .           | 1,253 6 2  | 255 0 0          |  |
| Laughton . . . . .       | 1,221 14 0 | 297 10 0         |  |
| Cowdery & Sons . . . . . | 1,032 19 9 | 189 3 4          |  |
| Ambrose & Son . . . . .  | 991 5 0    | 241 5 0          |  |
| Finnegan . . . . .       | 969 18 11  | 212 10 0         |  |
| Cook & Co. . . . .       | 959 11 5   | 195 0 0          |  |
| Feary . . . . .          | 921 10 0   | —                |  |
| Shortland & Co. . . . .  | *779 13 8  | 177 10 0         |  |
| Freeborough . . . . .    | 765 5 10   | —                |  |
| Page . . . . .           | —          | *156 5 0         |  |

| Gravel and Sand.         |           | Ironwork. |  |
|--------------------------|-----------|-----------|--|
| Ambrose & Son . . . . .  | 877 19 6  | 28 9 2    |  |
| Cowdery & Sons . . . . . | 857 11 8  | 11 3 4    |  |
| Bottoms Bros. . . . .    | 806 10 0  | 14 7 6    |  |
| Cook & Co. . . . .       | 791 16 3  | 22 7 6    |  |
| Freeborough . . . . .    | *685 14 0 | —         |  |
| Laughton . . . . .       | 630 17 8  | 10 0 0    |  |
| Ward . . . . .           | 549 14 0  | 10 11 8   |  |
| Feary . . . . .          | —         | 15 12 0   |  |
| Finnegan . . . . .       | —         | 11 15 0   |  |
| Baker . . . . .          | —         | *11 0 0   |  |
| Shortland & Co. . . . .  | —         | 10 11 8   |  |

\* Accepted.

## BURNTISLAND.

For Building Engine-House Stalk, Burntisland Harbour.

CALDER (accepted) . . . . . £162 0 0

## DUNFERMLINE.

For Alterations and Improvements at the Carnegie Baths, Dunfermline.

Large Swimming Bath.

|  |           |
|--|-----------|
| Birrell, mason . . . . .                         | £228 12 3 |
| Forbes, joiner . . . . .                         | 230 10 3  |
| Smith & Inglis, plumber and gas-fitter . . . . . | 74 7 5    |
| Anderson, slater and plasterer . . . . .         | 11 6 6    |

## Private Baths.

|  |          |
|--|----------|
| Smith & Inglis, plumber and gas-fitter . . . . . | 116 17 2 |
| Forbes, joiner . . . . .                         | 53 18 11 |
| Birrell, mason . . . . .                         | 7 5 0    |
| Anderson, slater and plasterer . . . . .         | 5 0 2    |
| Estimate for painting . . . . .                  | 100 0 0  |

## BOOKS.

Will shortly be published, a NEW WORK, treating upon

## VENTILATION, SANITATION, AND HEATING,

## ILLUSTRATED

WITH NUMEROUS PLATES,

BY

## ROBERT BOYLE,

Ventilating, Sanitary and Consulting Engineer.

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"To the young bricklayer we would say:—Buy both; study them carefully, and with average intelligence you will become a proficient craftsman."—ENGLISH MECHANIC, Dec. 26, 1884.

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## NEW EDITION.

## ILLUSTRATED CATALOGUE OF STABLE FITTINGS.

With full descriptions and prices of the most important inventions and improvements in Stable and Harness Room Fittings—Stable Paving, Drainage, Ventilation, &c., &c. THE ST. PANCRAS IRON WORK COMPANY. ST. PANCRAS ROAD, LONDON N.W.

## IMPORTANT CHANGE OF NAME.

THE Name of the Celebrated Qualities of HONE STONE produced from the Water of Ayr Stone Quarry and Hone Works, and esteemed and known in the market as "Water of Ayr Stone," "Snake Stone," and "Scotch Hone," and exclusively supplied by me and my predecessors for about one hundred years past, is now changed to the distinctive name "Tam o' Shanter" Hone or Stone, and some of the grades of quality suited for special purposes will be known as "Dalmore Hone," "Montgomeriestone Hone," and "Soutar Johnny Hone."

Every Stone will bear a Label or Stamp with one or other of these Names, and the Public are earnestly requested to ask for it accordingly, as only the very inferior sorts, and those hitherto rejected at my Quarry, will now be sent out by me as "Water of Ayr Stone" or "Snake Stone."

JOHN G. MONTGOMERIE.

Water of Ayr Stone Quarry & Hone Works, Dalmore, Stair, Ayrshire; July 1884.

Peremptory Sale, at Nominal Upset Prices. By Order of the Trustee of the late Mr. F. R. Stephens, Enfield Highway.—A Detached Residence and 16 Plots of Freehold Building Land.

MESSRS. REYNOLDS & EASON will SELL by AUCTION, at the Mart, Tokenhouse Yard, on Tuesday, February 24, 1885, at One for Two o'clock, 16 Plots of FREEHOLD LAND, in a good position for the erection of Shops, and a detached Private House, the first portion of the Prospect House Estate, fronting the high road from London to Hertford, between the Bell Inn and the bridge near the Ordnance Factory Station.

| Lots.   |     | Upset price. |  |
|---|-----|--------------|--|
| 1. Having a frontage of 27 feet, depth 145 feet . . . . .   | 255 |              |  |
| 2. " " " 25 " " 130 " . . . . .   | 50  |              |  |
| 3. " " " 20 " " 130 " . . . . .   | 50  |              |  |
| 4 to 7. " " " 20 " " 130 " . . . . .  | 60  |              |  |
| 8. " " " 20 " " 130 " . . . . .   | 70  |              |  |
| 9. A detached Private House, on plot of land 40 feet by depth of 184 feet, known as Prospect House, Enfield Highway, let at £40 per annum . . . . . | 550 |              |  |
| 10 to 13. Having a frontage of 30 feet, depth 186 feet . . . . .  | 60  |              |  |
| 13. " " " 30 " " 183 " . . . . .  | 70  |              |  |
| 14. " " " 30 " " 177 " . . . . .  | 68  |              |  |
| 15. " " " 30 " " 172 " . . . . .  | 68  |              |  |
| 16. " " " 30 " " 163 " . . . . .  | 68  |              |  |
| 17. " " " 30 " " 163 " . . . . .  | 68  |              |  |

May be viewed. Particulars, with plans of Messrs. Warburton & De Paula, Solicitors, 3 West Street, Finsbury Circus; at the Mart; and of the Auctioneers, 43 Bishopsgate Street Without.

## Auction Sales for 1885.

MESSRS. GLASIER & SONS beg to announce the following dates upon which they will hold SALES by AUCTION of LANDED ESTATES, Residences, Business Premises, Reversionary Interests, and Freehold and Leasehold Property generally, at the Mart, Tokenhouse Yard:—

|                       |                       |
|-----------------------|-----------------------|
| Thursday, February 19 | Thursday, July 23     |
| Thursday, March 26    | Thursday, August 6    |
| Thursday, April 16    | Thursday, October 22  |
| Thursday, May 14      | Thursday, November 26 |
| Thursday, June 11     | Thursday, December 10 |
| Thursday, July 2      |                       |

They will be glad to receive early intimation of property intended to be included in any of the above sales. Additional sale dates can be arranged to meet the convenience of clients.—41 Charing Cross.

## Sales for the Year 1885.

MESSRS. BAKER & SONS beg to announce that their SALES of LANDED ESTATES, Investments, Town, Suburban, and Country Houses, Business Premises, Building Land, Ground-rents, Reversions, and other Properties, will be held at the Mart, Tokenhouse Yard, E.C., as follows:—

|                     |                      |
|---------------------|----------------------|
| Friday, February 6  | Friday, July 10      |
| Friday, February 27 | Friday, July 17      |
| Friday, March 5     | Friday, July 24      |
| Friday, March 20    | Friday, August 14    |
| Friday, March 27    | Friday, August 28    |
| Friday, April 10    | Friday, September 11 |
| Friday, April 17    | Friday, September 25 |
| Friday, April 24    | Friday, October 2    |
| Friday, May 1       | Friday, October 9    |
| Friday, May 15      | Friday, October 30   |
| Friday, May 22      | Friday, November 13  |
| Friday, May 29      | Friday, November 20  |
| Friday, June 12     | Friday, November 27  |
| Friday, June 19     | Friday, December 4   |
| Friday, June 26     | Friday, December 11  |
| Friday, July 3      |                      |

Auctions can be held on other days besides those above specified.—No. 11 Queen Victoria Street, E.C.



**BROCKLEY.**

For Desk and Education Appliances, for West Kent Grammar School.  
HODKINSON & CLARKE, Limited, Canada Works, Birmingham (accepted).

**CARDIFF.**

For the Erection of Workshops in Mill Lane for Mr. Lascelles Carr. Mr. J. P. JONES, Architect, 27 Park Street, Cardiff.

MARTIN (accepted) . . . £570 0 0

For Laying Mains and other Works between Llanishen and Cardiff, for the Water Works Committee.

Fall . . . £7,657 0 0  
Small & Son . . . 6,964 12 6  
Mackay . . . 5,820 4 2  
Allen . . . 5,316 7 6  
Evan Bros. . . . 4,988 13 10  
Drewitt . . . 4,849 16 5  
Smith . . . 4,741 18 6  
Griffiths & Hulet . . . 4,692 0 0  
Rees . . . 4,562 1 6  
Pritchard & Sons . . . 3,978 17 7  
HILTON & SONS\* . . . 3,650 0 0

\* Amended and accepted.

*Sluice Valves, &c.*

Glenfield & Co. . . . 933 15 0  
Hamilton, Woods & Co. . . . 877 16 6  
BLAKENBOROUGH & SONS (accepted) . . . 799 10 6

*Sinking Trial Shafts.*

Holbrook & Harman. . . 1,413 10 0  
PICKTHALL & SONS (accepted). . . 707 15 0

**EDINBURGH.**

For Building Double Cottage at St. Cuthbert's Poorhouse. Mr. J. C. HAY, 140 Princes Street, Edinburgh, Architect.

*Accepted Tenders.*

White, mason . . . £222 0 0  
Lownie, joiner . . . 158 18 0  
Anderson & Son, slater . . . 23 5 8  
Ross & Son, plasterer . . . 31 2 0  
Kyles, plumber . . . 30 0 0

Total . . . £465 5 8

All of Edinburgh.

**EDINBURGH—continued.**

For Street Improvement Works, Edinburgh.

*North Lander Road.*

SHAW (accepted) . . . £309 1 8  
*Vimforth Place, &c.*

MORRIS & SONS (accepted) . . . 611 1 8

*Lochrin Outlet Drainage.*

SINCLAIR & SON (accepted) . . . 870 0 0

**GREENWICH.**

For Fitting Electric Bells to Eighteen and also to Thirty-three rooms, with Tell-tale Apparatus, for the Junior Mess, R.N. College, Greenwich.

Durham & Co., Stockport . . . £49 10 0  
Nicholls, Dalston . . . 48 0 0  
I. R. & G. P. Telegraph Co., Cannon Street . . . 43 18 0  
Caldwall, Nottingham . . . 40 0 0  
Covington, Canterbury . . . 34 0 0  
Eck, Callow & Co., Holborn . . . 33 0 0  
Fahrig, Eccles . . . 33 0 0  
Ellis, Dalston . . . 33 0 0  
Lavender & Taylor, Manchester . . . 30 8 0  
Izant, Brunswick Square . . . 30 0 0  
Fry, Peckham . . . 26 0 0  
Lancaster, East Dulwich . . . 21 9 0  
Richardson, Richmond . . . 21 9 0  
Powell & Co., Queen Victoria Street . . . 21 0 0  
Jennings, Lambeth . . . 20 16 0  
Francis & Co., Hatton Garden . . . 17 10 0  
Vulcan Company, Islington . . . 15 13 6

**HALIFAX.**

For Laying Water Pipes between Ogden and Southowram.

DAWSON, Bury (accepted) . . . £1,137 0 0

For Supplying and Fixing Boiler 20 feet long and 7 feet 6 inches in diameter at new Pumping Station, Halifax.

HANSON, Bradford (accepted) . . . £258 0 0

For Improvement Works, Free School Lane, Halifax.

NEWELL (accepted) . . . £2,344 13 11

For Works in Whitegate Road, Halifax.

DARNES & SON (accepted) . . . £94 8 8

**HALIFAX—continued.**

For Making and Fixing Cast-Iron Standards with Iron Tubular Railing in New Cattle Market, Halifax.

EDMUNDS & HOOKWAY (accepted) . . . £147 12 7

**HECKMOND WIKE.**

For Extensions to Brunswick Mill, Heckmond-wike. Mr. SAMUEL WOOD, Architect. Quantities by the Architect.

*Accepted Tenders.*

Drake, mason . . . £880 0 0  
Richardson & Sons, joiner . . . 610 0 0  
Brook, plumber . . . 98 13 0  
Shornton, slater . . . 83 0 0  
Medcalf & Lockwood, plasterer . . . 13 15 0

**HEREFORD.**

For Supplying 3,100 yards of Cast-iron Mains, for the Gasworks, Hereford.

*Pipes per Ton.*

Newton, Chambers & Co. . . £5 15 0  
Nelson . . . 5 13 6  
Macfarlane, Strange & Co. . . 5 13 0  
Laidlaw & Son . . . 5 7 0  
Clay Cross Iron Co. . . 5 5 0  
Thames Bank Iron Co. . . 5 2 6  
Stanton Ironworks Co. . . 5 2 6  
Spittle & Co. . . 5 0 0  
Firmstone Bros. . . 4 17 6  
Isca Foundry Co. . . 4 17 6  
Staveley Coal and Iron Co. . . 4 17 6  
J. & S. ROBERTS (accepted) . . . 4 15 0

*Branches per Cwt.*

|                            | s. | d. |
|----------------------------|----|----|
| Nelson                     | 10 | 6  |
| Macfarlane, Strange & Co.  | 10 | 0  |
| Laidlaw & Son              | 9  | 6  |
| Isca Foundry Co.           | 8  | 6  |
| Newton, Chambers & Co.     | 8  | 6  |
| Thames Bank Iron Co.       | 8  | 3  |
| Clay Cross Iron Co.        | 8  | 0  |
| Spittle & Co.              | 8  | 0  |
| Firmstone Bros.            | 7  | 9  |
| Stanton Ironworks Co.      | 7  | 9  |
| J. & S. ROBERTS (accepted) | 7  | 9  |
| Staveley Coal and Iron Co. | 7  | 6  |

## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

*TESTIMONIALS.*

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

"Yours, &c.

"To Mr. Grundy." "JAMES WEIR, F.R.I.B.A.

"Baptist Chapel, Clapham; 7, Merton, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

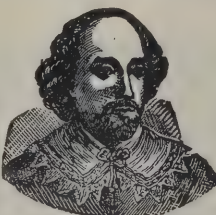
"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

to JOHN GRUNDY, 30 Duncan Terrace, City Road, London.

Works—TYLDESLEY, near MANCHESTER.

**QUANTITIES, ETC.**

Correctly Written and  
Lithographed by return of post  
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**J. L. ALLDAY.**

Shakespeare Steam Printing  
Works,  
COLMORE ROW,  
BIRMINGHAM.

## SERPENTINE. QUARRIES and WORKS, POLTESCO, near the Lizard, Cornwall.

Estimates forwarded on application to the Proprietor.

**JABEZ DRUITT,**

SOUTH GROVE, MILE END ROAD, LONDON.

Or the Manager at the Works.

Show Room for Chimney-pieces, 9 Castle Street, Holborn

## WM. WOOLLAMS & CO.,



ORIGINAL MAKERS OF

### ARTISTIC WALL PAPERS.

FREE FROM ARSENIC.

### PATENT EMBOSSED FLOCKS.

Dado Decorations, Embossed Leathers, Raised Flocks.

No Travellers Employed.

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MANCHESTER SQUARE, LONDON, W.

Fourteen Medals, including Gold Medal, International Health Exhibition, 1884.

## "SANITAS"

### THE HOUSEHOLD DISINFECTANT.

Sanitary Institute Medal, Exhibition, 1882.  
Silver Prize Medal, National Health Society, 1883.  
Award, International Medical and Sanitary Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH BODIES.

The Sanitas Co., Limited, Bethnal Green, E.

## ARCHITECTS, BUILDERS, AND CONTRACTORS.

## STEEL CUT NAILS!!

The modern and important discovery in the process of making Steel has so reduced the price, that Steel Cut Nails of the well-known "Mitre Brand" can now be supplied at only 1s. 6d. per cwt. more than the price of the ordinary Common Iron Cut Nails.

The Steel Cut Nails are far superior in quality and more uniform in size than any wrought or hand-made Nails yet produced, and being lighter in weight than ordinary Iron Cut Nails and free from rust, they are found cheaper in actual use than common Iron Cut Nails at 1s. 6d. per cwt. less.

These Steel Cut Nails are specially suited for Builders, Joiners, Coopers, Packing-Case Makers, &c., and a single trial is sufficient to convince any one of their superior quality and cheapness.

## PATENT WROUGHT STEEL NAILS. OVAL WIRE NAILS.

Ask your Factor or Ironmonger for  
"MITRE NAILS."  
WHOLESALE AND EXPORT ONLY.

FIRST-CLASS CERTIFICATE AND SILVER MEDAL  
AT CALCUTTA EXHIBITION.

**HENRY KING,**

(Late GREEN & KING.)

House Painter, Upholsterer, and General Contractor,

4 Lower Seymour St., Portman Sq., W

(Late of 100 NEW BOND STREET).

DESIGNS PREPARED AND ESTIMATES GIVEN.

## SYKES'S INDELIBLE WATER,

FOR ARCHITECTS, SURVEYORS, ENGINEERS, ETC.

One Shilling each. Carriage paid on receipt of Fourteen Stamps.  
DIRECTIONS.—Rub down Indian Ink, or any colour, in pure water, then add two or three drops of the Indelible Water to the consistency required; line in the drawing as usual, and let it stand until thoroughly dry. The drawing may be cleaned and coloured or even washed with sponge and water without fear of destroying the sharpness of the line.

Messrs. SYKES & CO., CLOUGH EDGE, Grimsar Road, HUDDERSFIELD.

## FOX & BARRETT'S SYSTEM FIRE-PROOF CONSTRUCTION.

MR. BARRETT, { York Buildings, Adelphi, London, W.



HAYBOROUGH.

For Altering and Making Additions to Farm-house, Hayborough, near Maryport, for Lieut.-Col. Sewell. Mr. J. S. SEYMOUR, Architect, Carlisle.

Accepted Tenders.

|                              |      |    |   |
|------------------------------|------|----|---|
| Palmer, carpenter and joiner | £158 | 0  | 0 |
| Lee, mason and bricklayer    | 110  | 15 | 0 |
| Mandle, slater               | 40   | 0  | 0 |
| Lee, plasterer               | 29   | 18 | 0 |
| Mandle, plumbing             | 21   | 0  | 0 |
| Mandle, painting and glazing | 21   | 0  | 0 |
| Mandle, smith                | 10   | 10 | 0 |

Total . . . . .£391 3 0

HERNE BAY.

For Building Board Schools, Herne Bay.

|                                |        |    |   |
|--------------------------------|--------|----|---|
| Schofield, London              | £5,168 | 0  | 0 |
| Martin, Wells & Co., Aldershot | 5,000  | 0  | 0 |
| Ingleton, Herne Bay            | 4,851  | 13 | 6 |
| Allen & Sons, Kilburn          | 4,780  | 0  | 0 |
| Rodda, St. Leonards            | 4,650  | 0  | 0 |
| Ansell, Lambeth                | 4,600  | 0  | 0 |
| Amos & Foad, Whitstable        | 4,457  | 15 | 0 |
| Cloake & Weston, Westgate      | 4,555  | 0  | 0 |
| Shrubsole, Faversham           | 4,517  | 17 | 4 |
| Cornelius, Whitstable          | 4,336  | 0  | 0 |
| Smith & Sons, Norwood          | 4,335  | 0  | 0 |
| Stiff, Dover                   | 4,286  | 0  | 0 |
| Wise, Deal                     | 4,286  | 0  | 0 |
| Greenwood, Mansfield           | 4,023  | 8  | 4 |
| Adams, Herne Bay               | 3,701  | 1  | 0 |

Modified Plan.

|                     |       |    |    |
|---------------------|-------|----|----|
| Schofield           | 4,598 | 0  | 0  |
| Martin, Wells & Co. | 4,450 | 0  | 0  |
| Allen & Sons        | 4,320 | 0  | 0  |
| Ingleton            | 4,272 | 13 | 6  |
| Ansell              | 4,150 | 0  | 0  |
| Rodda               | 4,138 | 0  | 0  |
| Amos & Foad         | 4,047 | 0  | 0  |
| Cloake & Weston     | 4,010 | 0  | 0  |
| Shrubsole           | 3,978 | 0  | 0  |
| Stiff               | 3,880 | 0  | 0  |
| Smith & Sons        | 3,880 | 0  | 0  |
| Cornelius           | 3,863 | 0  | 0  |
| Wise                | 3,793 | 0  | 0  |
| Greenwood           | 3,570 | 14 | 10 |
| Adams               | 3,313 | 15 | 2  |

HOPTON.

For Building Dwelling-house and Outbuildings, Hopton.

Masons.

|                          |      |   |   |
|--------------------------|------|---|---|
| Walker & Sons, Thornhill | £256 | 0 | 0 |
| Sheard, Mirfield         | 218  | 0 | 0 |
| Stead, Mirfield          | 207  | 0 | 0 |
| Brook, Bradley           | 153  | 0 | 0 |

Joiners.

|                        |    |   |   |
|------------------------|----|---|---|
| Stocks, Kirkheaton     | 75 | 0 | 0 |
| Hallas & Son, Mirfield | 68 | 0 | 0 |
| Senior, Bradley        | 55 | 0 | 0 |

Plasterers.

|                       |    |    |   |
|-----------------------|----|----|---|
| Oates & Son, Dewsbury | 15 | 0  | 0 |
| Brearley, Mirfield    | 13 | 15 | 0 |
| Shaw, Mirfield        | 11 | 15 | 0 |

KEIGHLEY.

For Works of Sewering, Keighley. Mr. W. H. HOPKINSON, Borough Engineer.

Victoria Road.

|                       |        |   |   |
|-----------------------|--------|---|---|
| Sterling, Liverpool   | £1,073 | 0 | 0 |
| Carter, Bradford Moor | 1,009  | 0 | 0 |
| Speight, Leeds        | 973    | 0 | 0 |
| Hall, Dudley Hill     | 952    | 0 | 0 |
| Pearson, Scholes      | 940    | 0 | 0 |
| Waterhouse, Idle      | 915    | 0 | 0 |
| Barrett, Harden       | 821    | 0 | 0 |
| Rhodes Bros., Shipley | 807    | 0 | 0 |
| Tempest, Keighley     | 785    | 0 | 0 |

SMITH & WHITAKER, Keighley (accepted) 766 0 0  
Engineer's estimate 826 0 0

Grange Street.

|                     |     |   |   |
|---------------------|-----|---|---|
| Sterling            | 376 | 0 | 0 |
| Pearson             | 370 | 0 | 0 |
| Carter              | 358 | 0 | 0 |
| Speight             | 344 | 0 | 0 |
| Hall                | 327 | 0 | 0 |
| Waterhouse          | 321 | 0 | 0 |
| Rhodes Bros.        | 293 | 0 | 0 |
| Barrett             | 288 | 0 | 0 |
| Smith & Whitaker    | 284 | 0 | 0 |
| TEMPEST (accepted)  | 284 | 0 | 0 |
| Engineer's estimate | 280 | 0 | 0 |

LLANGURIG.

For Repairs to Llangurig Bridge. Mr. W. N. SWETTENHAM, County Surveyor.

DURBISTON & Co. (accepted).

LONDON.

For Additions and Repairs to Foundry Wharf, High Street, Wapping, for the City of London Real Property Company. Mr. R. B. MARSH, Architect.

|                |      |   |   |
|----------------|------|---|---|
| Conder         | £809 | 0 | 0 |
| Brass          | 797  | 0 | 0 |
| Ashby & Horner | 785  | 0 | 0 |
| Nightingale    | 717  | 0 | 0 |
| Lawrance       | 717  | 0 | 0 |
| Greenwood      | 699  | 0 | 0 |

For the Erection of an Out Patients' Department and Nurses' Home, for the Victoria Hospital for Children, Queen's Road, Chelsea. Messrs. H. SAXON SNELL & SON, Architects, London.

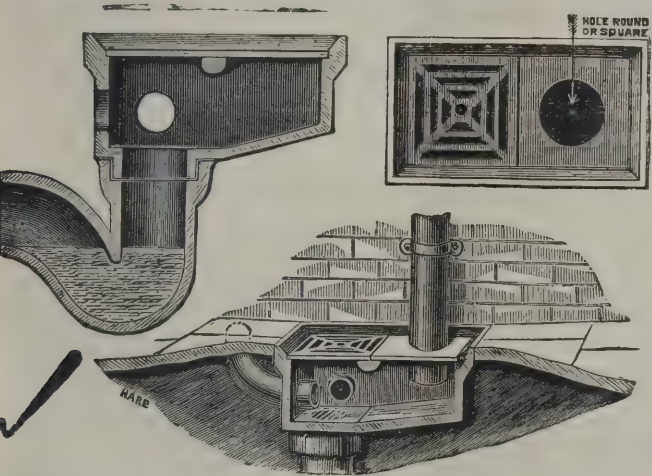
Carcass. Inside.

|              | Carcass. | Inside. | Finishings. |
|--------------|----------|---------|-------------|
| Nightingale  | £3,857   | 0       | 0           |
| Macey & Co.  | 3,647    | 0       | 0           |
| Mowlem & Co. | 3,383    | 0       | 0           |
| Wall.        | 3,261    | 0       | 0           |

For Erecting the proposed New Building on the Thames Embankment for the President and Fellows of Sion College. Mr. A. W. BLOMFIELD, Architect. Messrs. Gardiner Son & Theobald, Surveyors.

|                  |         |   |   |
|------------------|---------|---|---|
| Simpson & Son    | £23,500 | 0 | 0 |
| Bangs & Co.      | 23,400  | 0 | 0 |
| Conder           | 22,950  | 0 | 0 |
| Lovatt           | 22,526  | 0 | 0 |
| Perry & Co.      | 22,483  | 0 | 0 |
| Nightingale      | 22,470  | 0 | 0 |
| Greenwood        | 21,995  | 0 | 0 |
| Parramore        | 21,900  | 0 | 0 |
| Thompson         | 21,890  | 0 | 0 |
| Dove Bros.       | 21,755  | 0 | 0 |
| Holland & Hannen | 21,747  | 0 | 0 |
| Reid Bros.       | 21,678  | 0 | 0 |
| Macey & Sons     | 21,550  | 0 | 0 |
| Foster & Dixey   | 21,414  | 0 | 0 |
| Goddard          | 21,275  | 0 | 0 |
| Stevens & Bastow | 20,993  | 0 | 0 |
| Chappell         | 20,823  | 0 | 0 |
| Parmenter        | 20,700  | 0 | 0 |
| Brown & Son      | 20,500  | 0 | 0 |
| Mowlem & Co.     | 20,444  | 0 | 0 |
| Bull & Son       | 19,500  | 0 | 0 |

BELLMAN'S PATENT GULLY.



This Gully possesses the following advantages:—

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- Ventilates the Pipes and Trap.
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- Is easy of Access for Clearance.

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.

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| LONDON—continued.   |      |      |
|---|------|------|
| For Altering Covered Playground at Board School, Park Walk.   |      |      |
| Oldrey . . . . .  | £60  | 0 0  |
| Holden & Co. . . . .  | 48   | 10 0 |
| For Repairing Steps at Board School, Marlborough Road.  |      |      |
| Stimpson & Co. . . . .  | £43  | 0 0  |
| Curtis . . . . .  | 34   | 10 0 |
| Oldrey . . . . .  | 27   | 0 0  |
| For Re-erection of Iron School Buildings, Purcell Road.   |      |      |
| Jerrard . . . . .   | £379 | 0 0  |
| Pitchford . . . . .   | 369  | 0 0  |
| For Forming Drawing class-room at Board School, Sumner Road.  |      |      |
| Jerrard . . . . .   | £155 | 0 0  |
| Ash . . . . .   | 129  | 0 0  |
| Higgs . . . . .   | 120  | 0 0  |
| For Repairs to Furniture at Board Schools.  |      |      |
| <i>Everington Street.</i>   |      |      |
| Bodler . . . . .  | £12  | 7 6  |
| Williams . . . . .  | 12   | 5 0  |
| <i>Hamond Square.</i>   |      |      |
| Davys Bros. . . . .   | 12   | 14 0 |
| Cruwys . . . . .  | 12   | 0 0  |
| <i>Settles Street.</i>  |      |      |
| Hughes . . . . .  | 11   | 9 2  |
| Cruwys . . . . .  | 11   | 0 0  |
| Troughton & Co. . . . .   | 10   | 15 0 |
| For Fitting Up a Five-storey Lift in the New Hall in course of Erection by the Worshipful the Butchers' Company in Bartholomew Close. Mr. ALEXANDER PEEBLES, Architect. |      |      |
| CLARK, BUNNETT & Co. (accepted).  |      |      |
| For Fitting Up a Five-storey Hydraulic Lift in New Premises, No. 25 Walbrook. Mr. ALEXANDER PEEBLES, Architect.   |      |      |
| WAYGOOD & Co. (accepted).   |      |      |
| For Heating the Residence of Mr. J. Darell Blount, Maple, Durham.   |      |      |
| BACON & Co. (accepted).   |      |      |
| For Heating No. 4 Royal Exchange.   |      |      |
| BACON & Co. (accepted).   |      |      |

| LONDON—continued.  |        |      |
|--|--------|------|
| For the Pulling Down and Rebuilding of No. 25 Walbrook, E.C. Mr. ALEXANDER PEEBLES, F.R.I.B.A., F.S.I., Architect. |        |      |
| NIGHTINGALE (accepted).  |        |      |
| For Fitting Up a Steam-power Lift in No. 31 Love Lane for Sir H. W. Peek, Bart. Mr. ALEXANDER PEEBLES, Architect.  |        |      |
| WAYGOOD & Co. (accepted).  |        |      |
| LUTON.   |        |      |
| For Erection of Small Villa for Mr. W. H. Higgins, in Castle Street, Luton. Mr. JOHN R. BROWN, Architect, Luton.   |        |      |
| Dunham, Luton . . . . .  | £800   | 0 0  |
| Batson, Luton . . . . .  | 715    | 0 0  |
| Redhouse, Stotfold Baldock . . . . .   | 698    | 0 9  |
| Robinson, Dunstable, Beds. . . . .   | 665    | 0 0  |
| Neville, Luton . . . . .   | 634    | 0 0  |
| For Erection of Six Shops in Cheapside, Luton, for Mr. Wiseman. Mr. JOHN R. BROWN, Architect, Luton.               |        |      |
| Redhouse, Stotfold Baldock . . . . .   | £4,496 | 0 0  |
| Neville, Luton . . . . .   | 3,716  | 0 0  |
| Dunham, Luton . . . . .  | 3,700  | 0 0  |
| Robinson, Dunstable . . . . .  | 3,698  | 0 0  |
| SMART BROS., Luton (accepted) . . . . .  | 3,348  | 0 0  |
| MIDGLEY.   |        |      |
| For New Reservoir, Roadway, Retaining and Boundary Walls. Mr. T. L. PATCHETT, Architect, Halifax.                  |        |      |
| MITCHELL, Warley Town, near Halifax.   |        |      |
| NESTON.  |        |      |
| For Covering Tank at the Hinderton Tower, Neston, with Timber.   |        |      |
| Coyne . . . . .  | £19    | 15 0 |
| Grey . . . . .   | 15     | 10 0 |
| Fleming . . . . .  | 15     | 0 0  |
| WOODWARD (accepted) . . . . .  | 10     | 13 6 |
| NEWCASTLE-ON-TYNE.   |        |      |
| For Erection of Baths and Washhouses at Church Street, Arthur's Hill, and at Scotswood Road, Elswick.              |        |      |
| <i>Church Street.</i>  |        |      |
| HASWELL & WAUGH (accepted) . . . . .   | £7,316 | 0 0  |
| <i>Scotswood Road.</i>   |        |      |
| ELLIOTT (accepted) . . . . .   | 7,750  | 0 0  |

| NEWTOWN.   |         |       |
|--|---------|-------|
| For Additions to Severn Valley Mills, Newtown, Montgomeryshire. Warehouses, Drying-floor and Coal-shed, and Ironwork. Mr. ROBERT HURST, Architect, Welshpool. Quantities by the Architect. |         |       |
| <i>Ironwork.</i>   |         |       |
| Jones & Son, Sedgley . . . . .   | £200    | 0 0   |
| Bryce, Shrewsbury . . . . .  | 199     | 0 0   |
| Phillips, Newtown . . . . .  | 196     | 0 0   |
| Turner & Son, Newtown . . . . .  | 194     | 0 0   |
| Clay Bros., Oswestry . . . . .   | 173     | 10 0  |
| J. & M. Morris, Welshpool . . . . .  | 173     | 0 0   |
| Gethin, Shrewsbury . . . . .   | 169     | 10 0  |
| THOMAS, Llanidloes (accepted) . . . . .  | 123     | 6 6   |
| <i>Drying-floor and Shed.</i>  |         |       |
| Jones, Welshpool . . . . .   | £708    | 0 0   |
| Thomas, Llanidloes . . . . .   | 274     | 16 0  |
| Williams, Knighton . . . . .   | 199     | 15 4  |
| Morris & Son, Newtown . . . . .  | 148     | 8 0   |
| Phillips, Newtown . . . . .  | 129     | 14 6  |
| Swain & Owen, Newtown . . . . .  | 103     | 3 10  |
| Bryce, Shrewsbury . . . . .  | 94      | 15 0  |
| Gethin, Shrewsbury . . . . .   | 89      | 13 11 |
| DAVIES & SONS, Newtown (accepted) . . . . .  | 82      | 6 3   |
| Jones & Son, Sedgley . . . . .   | 80      | 16 0  |
| <i>Warehouses, &amp;c.</i>   |         |       |
| Williams . . . . .   | £3,291  | 16 8  |
| Thomas . . . . .   | 2,827   | 0 0   |
| Jones & Son . . . . .  | 2,748   | 0 0   |
| Swain & Owen . . . . .   | 2,742   | 19 3  |
| Bryce . . . . .  | 2,713   | 0 0   |
| Morris & Son . . . . .   | 2,420   | 0 0   |
| Phillips . . . . .   | 2,364   | 6 0   |
| DAVIES & SON (accepted) . . . . .  | 2,150   | 0 0   |
| Gethin . . . . .   | 2,146   | 5 3   |
| Jones . . . . .  | 1,966   | 14 0  |
| NOTTINGHAM.  |         |       |
| For Construction of Covered Service Reservoir, Park Row and Rope Walk Street, Nottingham. Mr. M. OGLE TARBOTTON, Engineer. Quantities by Messrs. Hovenden & Berridge.                      |         |       |
| Highest tender . . . . .   | £11,163 | 7 8   |
| Engineer's estimate . . . . .  | 9,800   | 0 0   |
| SMART, Nottingham (accepted) . . . . .   | 9,393   | 0 0   |

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|                 |        |   |   |
|-----------------|--------|---|---|
| F. & F. T. Wood | £5,973 | 0 | 0 |
| Marshall        | 4,990  | 0 | 0 |
| Cardus          | 4,937  | 0 | 0 |
| Bloomfield      | 4,473  | 0 | 0 |
| Pound           | 4,424  | 0 | 0 |
| Mayo            | 4,200  | 0 | 0 |

**PONTYPRIDD.**

For Additions to Cilfynydd Inn, near Pontypridd. Mr. JOHN WILLIAMS, Architect, Morgan Town, Merthyr. Quantities by the Architect.

|                                     |      |    |   |
|-------------------------------------|------|----|---|
| Lewis, Treharris                    | £765 | 5  | 0 |
| Morgan, Aberdare                    | 753  | 0  | 0 |
| Jenkins, Merthyr                    | 670  | 0  | 0 |
| Pring & Co., Pontypridd             | 598  | 15 | 0 |
| JONES & PRICE, Treharris (accepted) | 430  | 10 | 0 |

**ROSSCARBERRY.**

For Works in connection with Water Supply, Rosscarberry, co. Cork.

|                                |      |   |   |
|--------------------------------|------|---|---|
| Casey, Skibbereen              | £904 | 0 | 0 |
| Hayes, Rosscarberry            | 780  | 0 | 0 |
| Collins, Clonakilty            | 762  | 0 | 0 |
| Hurley, Rosscarberry           | 746  | 0 | 0 |
| Donoghue, Ballydurane          | 717  | 0 | 0 |
| HAYES, Rosscarberry (accepted) | 650  | 0 | 0 |

**WALHAM GREEN.**

For Alterations and Additions at the Red Lion Public-house, Walham Green, S.W., for Mr. J. H. Squires. Mr. H. I. NEWTON, Architect, 17 Queen Anne's Gate, Westminster.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Lamble                  | £1,345 | 0 | 0 |
| Godden                  | 1,299  | 0 | 0 |
| Cook                    | 1,083  | 0 | 0 |
| Walker                  | 1,068  | 0 | 0 |
| Burman & Son            | 1,057  | 0 | 0 |
| GIBBS & FLEW (accepted) | 900    | 0 | 0 |

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Dry Black Walnut, 8d. and 9d. per foot.  
T. FORMAN, Walnut Tree Walk, Kennington Road, S.E.

**ROTHES.**

For Completing System of Drainage in the Burgh of Rothes.

|                             |      |    |   |
|-----------------------------|------|----|---|
| Stewart, Rothes             | £835 | 0  | 0 |
| Simpson, Rothes             | 744  | 8  | 0 |
| Stewart, Keith              | 728  | 0  | 0 |
| Sime, Keith                 | 722  | 0  | 0 |
| Bowden, Edinburgh           | 690  | 0  | 0 |
| Hunter, Elgin               | 667  | 17 | 0 |
| Grant, Rothes               | 652  | 0  | 0 |
| J. Gordon, jun., Elgin      | 642  | 0  | 0 |
| A. & J. McKenzie, Elgin     | 640  | 17 | 0 |
| M'Lean, Elgin               | 630  | 8  | 6 |
| SCOTT, Inverness (accepted) | 611  | 0  | 0 |

**STREATHAM.**

For Cleaning Out, &c., of the Pond on the Upper Common at Streatham, for the Metropolitan Board of Works.

|                      |      |    |   |
|----------------------|------|----|---|
| Bottoms Brothers     | £187 | 0  | 0 |
| Brown & Netherton    | 140  | 0  | 0 |
| Beadle Brothers      | 125  | 0  | 0 |
| Dudlev               | 120  | 0  | 0 |
| Shergold             | 90   | 0  | 0 |
| Barnett              | 67   | 15 | 0 |
| Meston               | 65   | 0  | 0 |
| BLACKMORE (accepted) | 30   | 0  | 0 |

**TRING.**

For Laying Stoneware Pipes in existing Sewer along Brook Street, Tring, and for Constructing 12-inch Stoneware Pipe Outfall Sewer. Messrs. THOMAS & TAYLOR, 1 Westminster Chambers, S.W., Engineers.

|                                |        |    |    |
|--------------------------------|--------|----|----|
| Taylor, London                 | £1,064 | 0  | 0  |
| Cooke & Co., London            | 820    | 0  | 0  |
| Bell, Tottenham                | 795    | 0  | 0  |
| Shortland & Co., Carrington    | 784    | 12 | 2  |
| Thomas & Cardus, Willesden     | 727    | 0  | 0  |
| Dickson, St. Albans            | 697    | 15 | 3  |
| Catley, London                 | 680    | 0  | 0  |
| Capper, St. Albans             | 603    | 8  | 3  |
| Hill, High Wycombe             | 527    | 0  | 0  |
| Fincher, Tring                 | 525    | 0  | 0  |
| Bowland Bros., Fenny Stratford | 485    | 13 | 11 |

**WALLSEND.**

For Building Schoolrooms and Enlarging Biddle Schools for the Wallsend-on-Tyne School Board. Mr. THOS. SOUTHRON, Architect, 70 King Street, South Shields. Quantities by the Architect.

|                                     |        |    |    |
|-------------------------------------|--------|----|----|
| Elliott, North Shields              | £2,017 | 0  | 0  |
| Shotton Bros., North Shields        | 1,962  | 10 | 3  |
| Whicheston, Newcastle               | 1,935  | 0  | 0  |
| White, Walker                       | 1,917  | 0  | 0  |
| Weir & Williams, Howdon             | 1,857  | 0  | 0  |
| Tyrie, Gateshead                    | 1,855  | 7  | 3  |
| Lax, Crook                          | 1,847  | 0  | 0  |
| J. & W. Simpson, North Shields      | 1,845  | 0  | 0  |
| Hutchinson, Gateshead               | 1,842  | 0  | 3  |
| Fortune, North Sunderland           | 1,780  | 13 | 7  |
| Harrison, West Hartlepool           | 1,757  | 0  | 0  |
| Fishburn Bros., North Shields       | 1,738  | 0  | 0  |
| TURNER & GREEN, Wallsend (accepted) | 1,735  | 9  | 10 |
| Urwine, Shottley Bridge             | 1,683  | 11 | 6  |
| Mitcheson & Co., Newcastle          | 1,200  | 0  | 0  |

**WHITBY.**

For Building Church, West Cliff, Whitby. Padbury & Son. £13,937 10 7  
This work, for which the above tender was accepted last year, is now to be commenced.

For Alterations and Additions to No. 15 Wellclose Square, Whitby, and Club House adjoining, for Dr. Mead. Mr. EDWARD H. SMALES, A.R.I.B.A., Architect.

Excavating, Brickwork, Mason, Slater, Plasterer, Carpenter, Joiner, and Painter.

|                  |      |    |   |
|------------------|------|----|---|
| White            | £535 | 10 | 0 |
| Winterburn       | 498  | 10 | 0 |
| Russell          | 474  | 10 | 0 |
| Langdale & Son   | 419  | 0  | 0 |
| Gladstone        | 390  | 0  | 0 |
| BROWN (accepted) | 347  | 0  | 0 |

Plumbing, Glazing, Smithwork, and Gasfitting.  
Brown. £40 0 0  
Fisher. 34 1 3  
SMITHSON (accepted). 34 0 0

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# The Architect.

## THE WEEK.

THE English language does not contain words which will give adequate expression to the disgust that is felt against the wretches who are attempting to destroy the public buildings of the country. The madman, who in his vanity set fire to the ancient temple, was an estimable character if compared with the cowards who, while causing destruction to others, keep themselves in safety. The political reasons which are involved in the outrages are beyond consideration here; but it is ridiculous for anyone with common sense to suppose that the destruction of a hundred historic buildings would have the least influence in hastening Irish independence. The South Kensington Museum is said to be threatened, but what Parliament would be cowed by the destruction of pottery and trinkets? There is such a mixture of mischief, stupidity, and malice in these experiments that the perpetrators become almost degraded to the level of gorillas. Under the new conditions no building is safe, and the latest proposal which the Americans allow to be concocted is to start a general conflagration of London, by means of fifty Irish agents, who are to begin by setting fire to the houses in which they lodge. Against a band of desperadoes, with abundance of dynamite, scientific construction is of little use. It is therefore incumbent on the authorities, by increased watchfulness, to guard against dangers. It is also requisite that the punishments for the crime should be very different from what are now inflicted. The criminals are exalted when they are treated as State prisoners, and there might be a salutary change if no difference were made between dynamiters and garotters. A liberal application of the "cat" would dispel a good many romantic illusions among the Celts.

THE Irish politicians who are so guarded against uttering a syllable against the outrages would do well to consider the effect a repetition of last Saturday's experiment might have on the condition of their countrymen in England. There is probably a larger proportion of Irishmen connected with the English building trades than is to be found in any other form of industry. The surveyor who has charge of the fabric of the Houses of Parliament (and whose life was nearly sacrificed on Saturday) is an Irishman, and it may be assumed that many of his countrymen are now employed in removing the *débris*. The same state of things is found throughout the country. Irish overseers and Irish labourers of all classes are trusted, and prove themselves to be worthy of trust. But it would not be difficult to excite a panic by which Irish workmen would henceforth be kept away from buildings. There is no doubt that discontent prevails, and the apparent indifference of the Irish in England is not likely to create confidence at the present juncture.

M. ALPHAUD has presented a report in which he estimates the cost of the buildings and other works for the international exhibition which is to be held in 1889 at fifty-six millions of francs. It is proposed to erect two large and permanent buildings on the Champ-de-Mars, each having an area of 34,000 square mètres. One will be approached by the Avenue la Bourdonnaye, and will be devoted to arts; the second, near the Avenue Suffren, to the sciences. They will be connected by a gallery. The palaces will communicate with the temporary buildings of the exhibition, which are to cover 225,000 mètres. There will be a central avenue of 60 mètres width. As yet no arrangement has been made about the plans for the buildings.

Of all men a clergyman should be the most cautious in making charges against his neighbour, although he may belong to the maligned profession of architects. The Rev. R. Moss, D.D., Blackburn, did not remember this maxim. Having been disappointed in a building speculation, he consoled himself by allegations against Mr. AZAHEL

P. BELL, his architect, and then endeavoured to evade the consequences of his ill-temper by defences which have been described as unseemly. Mr. Moss is the owner of a few acres of ground in Bowdon, which he resolved to lay out in plots for building. Mr. BELL was asked to lay out the estate, and the remuneration was to be equal to the first half-year's chief rents. It is not unusual for owners of an estate to set an example by building a house or two. Mr. Moss, it appears, proposed to build three. The tenders were 885*l.*, 1,160*l.*, and 1,924*l.* The two which were cheapest were completed in October 1883; the building of the third was postponed. Mr. BELL's commission at 5 per cent. for the two houses and 2½ per cent. on the third amounted to 219*l.* 18*s.* 7*d.*, out of which 62*l.* had been paid while the works were in progress. Mr. Moss was dissatisfied, apparently without reason. He may have heard it insinuated, as clients do very often, that architects are in the habit of taking commissions from tradesmen, and that Mr. BELL was like his fellows. Mr. Moss gave expression to the allegations, and confirmed them by taking from Mr. BELL the laying out of the estate. As if to show his leniency, he said he could make graver charges. The case had to go before the Courts, and was heard in Manchester on Wednesday, when, of course, Mr. BELL won his fees. But does not action for libel also lie against the clergyman?

THE Paris Municipality have resolved to carry out works on a large scale. On Wednesday there was a vote of 963,000 frs. towards the cost of the new water supply, which is expected to cost eighty millions of francs. The proposed alterations in the city seem like a revival of the HAUSSMAN régime. They are estimated at six hundred millions of francs, but the outlay will eventually be far higher. Two large streets are to be constructed on the south side leading to the Place Saint-Germain des Prés, and the Boulevard Haussman is to be at last extended to meet the Boulevard Montmartre. There will be other improvements. With so large an expenditure the danger arising from so many unemployed men will be abated.

THE authorities at South Kensington were lately compelled to call the attention of the Glasgow Corporation to the risks which were incurred by sending objects for exhibition to the art galleries of the City. The galleries form part of a block of buildings containing shops—one belonging to a baker. It is not surprising there have been fires lately on the premises. A committee of the Corporation have been considering the subject, and they have proposed a partial reconstruction of the galleries. The three M'LELLAN halls are to be retained, but the roofs are to be altered to allow of better lighting and ventilation. Hot-water pipes are also to be introduced. The ground-floor is to be altered. The tenants are to be removed at the earliest opportunity, but the front buildings and shops are considered to be unadaptable for gallery purposes. It is to be regretted that no attempt will be made to give an architectural front to the exterior. "The elevation," says the report, "is a matter of secondary importance. The site is on the line of a public street, and no extra frontage is available to give atmosphere and individuality to the erection. Elaborate architectural effect would be thrown away on the situation; but, even were the site suitable for architectural display, we are of opinion the large expenditure on the structure is undesirable." We are compelled to differ with the committee. An effective front to the galleries is desirable. The buildings are rather monotonous, and the Institute Gallery, which is near, suggests what can be done with a limited frontage.

THE space that is available for students in the Ecole des Beaux-Arts, Paris, is cramped. The French Government have determined to purchase the adjoining Hôtel de Chemay, with its gardens and other premises, in order to enlarge the schools. The property will cost over four millions of francs, and the alterations will add half a million to the amount. But the additions will enable the students to work with more satisfaction to themselves, and the galleries for exhibitions will no longer need to be used for *ateliers*.



## GAINSBOROUGH AS A PORTRAIT PAINTER.

IF it be true that a painting in a mysterious way reveals the mood of the artist when he was at work upon it, then there ought to be a vast amount of delight for every spectator in the Grosvenor Gallery at the present time. GAINSBOROUGH never attempted anything beyond his powers. He appeared to work *con amore*, and there is much the same kind of pleasure in looking at his pictures which is found in reading the novels of JANE AUSTEN or the letters of Madame DE SÉVIGNÉ. Everything shows that within the limits he prescribed for himself, GAINSBOROUGH was a master, and we have none of those ambitious failures which are found even among the works of such a man as HOGARTH. We find so much frankness, freedom, and pleasure about the majority of the two hundred pictures in the Grosvenor Gallery, that the visitor is liable to forget what a vast amount of honest hard work, as well as of genius, the collection represents.

Credit must be given for the pains which have been taken in the selection. But we should have liked to have seen more of the works which reveal GAINSBOROUGH'S manner of working. The unfinished portrait of PERDITA ROBINSON, which was exhibited in 1876, is one of these examples. REYNOLDS says that GAINSBOROUGH used to form all the parts of his picture together, the whole going on, as it were, at the same time. A glimpse of this procedure is to be had in the portrait of the third Earl STANHOPE, and one or two others in the gallery which are unfinished, but none of them suggests it so completely as the sketch we have mentioned, which, in addition to the figure, contains a background that when completed would probably have been as elaborate as the view that is seen in the picture of THOMAS SANDBY and his wife. With the one exception, the Grosvenor collection is sufficiently comprehensive to enable a student to study GAINSBOROUGH with profit to himself.

The first question to be determined in considering a portrait-painter's works is the relation between him and his subjects. At the present time there are plenty of people who would say that in its most perfect condition it approaches a photographer's lens, and that if only clever colourists could be induced to paint up something or other which the lens had produced, then there would be a speaking likeness. Between the attempts which have been made by men of every age to make their canvases as faithful as mirrors up to the analytic power that is seen in some of TITIAN'S portraits, and which only the subject himself may have fully understood, there are many varieties. Every artist who knows his business exemplifies a good many of the attempts, and varies his work according to the opinion which he may have of the man or woman before him, or according to the mood he may be in. REYNOLDS was a conscientious painter; but when his works are brought together it is plain that occasionally he painted portraits in a perfunctory way. There is not much of mechanic exercise in the Grosvenor Gallery. GAINSBOROUGH was a good fellow at heart, and his enjoyable spirit soon discovered anything that was to be liked in the men and women of all ranks with whom he came in contact. He was a humorist that was akin to ADDISON and GOLDSMITH, and it is no exaggeration to say that in his best work there is a touch of the kindly satire of the *Spectator*.

Take, for example, the portrait of TENDUCCI, the singer. The vanity of the coxcomb, with his painted face and pencilled eyebrows, his padded coat and affectation of amiability, are put on canvas in a manner that would be impossible unless the artist had thoroughly enjoyed every trait as a curiosity. Very different is the vanity of Mr. VESTRIS, the dancing-master, who has eighteenth-century deportment written in every line of his face. We are permitted to gaze on a professor of high art, who would be competent to instruct princesses in decorum, teach fine gentlemen how to open a snuff-box with grace, and, with a qualified pupil, expound the conduct of a clouded cane in fifty lessons. The superfine air of the foreign performer is likewise seen in the position of the fingers in the portrait of GIARDINI the fiddler, a man who must have been admired by the painter. The full-length of PARSON TATE would in any other hands be a failure. It is not a fencing-master but a duellist that is before us, and

one who has no misgivings of the certainty of his eye and arm. He bends the cane as if it were a rapier, and looks as if he were making an exact calculation of how many inches the best spot to pink his man was distant from a particular button. This wonderful clergyman, who could box like a prize-fighter, write plays, put down insurrections, and reclaim land from the sea, naturally found his way to GAINSBOROUGH'S studio, and must have been thoroughly appreciated there. Even more humour is seen in the figure of that good young man with the chubby face, Lord FOLKESTONE. He wears the entire of his peer's robes, including a wig and colossal tassels, crosses his legs in an uncomfortable fashion from a sense of duty, holds a big scroll with a plan of the Society of Arts accurately delineated thereon, and does his best to look grave. Fate often puts round men into square holes, but there never was a more remarkable example of her caprice than in placing a peer like his lordship at the head of a learned society. If GAINSBOROUGH could suffer regret, it must have been from the inability to paint more ample robes or introduce more of the old-fashioned Hudsonian conventionalism, or what would be better still, make a cherub out of my lord's round head, with a pair of wings attached. The difference in treatment between this work and the delightful picture *Thomas Sandby, R.A., and his Wife*, which is almost like a copy of a group in Dresden china, is very remarkable. GAINSBOROUGH was not a reading man, and he must have been amused with the notion of the Deputy Ranger of the Great Park, in his scarlet uniform, declaiming from a romance for the gratification of Mrs. SANDBY.

It is in his treatment of the portraits of ladies that the gentle humour of GAINSBOROUGH is most apparent. He knew how much value was placed on dress by women, and he depicted the fashions of that time in a manner that was very different to REYNOLDS'. The portraits of his daughters might serve to illustrate the description of OLIVIA and SOPHIA PRIMROSE in "The Vicar of Wakefield." MARY GAINSBOROUGH, we may be sure, believed, like her mother, that she was a descendant of a long line of princes, and gazed on the world—as now from canvas—with the air of a superior person. Destiny could allot her no more exalted husband than a professional oboe player. The fine bust of Mrs. FITZHERBERT almost corresponds with what is said of the Widow WADMAN in "Tristram Shandy." The skill with which the shapely arm and hand are made an index to the bright eyes could hardly have been derived from a painter's invention, and must have been one of those habits which gave fascination to the lady. The portrait of the Duchess of DEVONSHIRE of which there is a capital monochrome sketch in the Grosvenor Gallery, is also characteristic. REYNOLDS would not have ventured to express so much energy and buxomness in a figure which is a JUNO from head to foot, although he could have expressed equally well the character of the face. Power of another kind is expressed in the portrait of the Spoiled Child, called the Hon. Mrs. GRAHAM, which is worth a journey to Edinburgh to see. It is not impossible that in the rendering of the manifold traits which constitute femininity GAINSBOROUGH'S insight was not the same as the vision of the majority of people. His *Duchess of Devonshire*, *Hon. Mrs. Graham* (in the Edinburgh Gallery), *Mary Gainsborough*, *Mrs. Siddons*, may not have been recognised by the acquaintances of those ladies. REYNOLDS has hinted this when speaking of GAINSBOROUGH'S manner. He says:—"It must be acknowledged there is one evil attending this mode—that if the portrait were seen previous to any knowledge of the original, different persons would form different ideas, and all would be disappointed at not finding the original correspond with their own conceptions." It is no longer possible to verify GAINSBOROUGH'S portraits, but every one knows that when he and REYNOLDS represent the same subject their works rarely coincide in appearance or expression. When GAINSBOROUGH paints two portraits of the same person, there is also a good deal of difference between them. There are numerous portraits in which not the least trace of GAINSBOROUGH'S humouristic spirit is to be found, although there were opportunities for its display. The old granddaughter of the great Duke of MARLBOROUGH, with her juvenile bonnet, was a subject for a little sly satire. The artist has apparently endeavoured to be simply truthful, and it would have been better, perhaps, if he had softened



the bitter mouth and made the face show some sign of a woman's gentleness. GAINSBOROUGH evidently thought that eighteenth-century babies in skull caps were strange objects, as we may judge by the portrait of the future Lady SAY and SELE, and the Puritanic little girls who wear the dresses of charity children can hardly fail to excite a smile; but the pride of the mothers who accompany them is always painted in a way that, for GAINSBOROUGH, might be called reverential.

However much we may admire GAINSBOROUGH, it must be acknowledged that there were subjects with which REYNOLDS succeeded far better. GAINSBOROUGH could hardly have produced the portrait of Lord HEATHFIELD, which is the most characteristic representation in existence of that bull-dog tenacity which has enabled England to hold its own against the world. The *Viscount Hood, K.C.B.*, in the Grosvenor Gallery, does not correspond with our ideas of the sea captain who was in the van of the fight between RODNEY and DE GRASSE. GAINSBOROUGH is not the painter of heroes and warriors; nor are civilians who were remarkable for power at their best on his canvases. His *Dr. Johnson* is a kindly old gentleman, with very dim, gentle blue eyes. He is not the sage to whom the Literary Club looked up with reverence, the dictator whose bow-wow manner scared many aspirants. His *Lord-Chancellor Camden* is the country gentleman rather than the statesman who was supposed to be equal to the composition of JUNIUS's Letters. Whether he was ill at ease with one class of men is not clear, and he may have been awed by HOOD's grim looks and CAMDEN's coldness. It is also very remarkable that the portraits of little girls by GAINSBOROUGH are far less interesting than REYNOLDS'. The Grosvenor Gallery has nothing which suggests the fascination of the *Penelope Boothby*. On the other hand, among REYNOLDS' boys there is not one that will compete with the *Blue Boy*, or the portrait of GEORGE CANNING after he left Eton. They have the advantage of fancy dress, and are masquerading, as it were; but genuine boyishness, of the English and somewhat mischievous kind, is seen in the *John Plumpin* and in the head of the Barton Grange colour-grinder. They are preferable to the *Samuels* of REYNOLDS, although both have probably stolen a good many apples and despoiled many birds'-nests. Why did not GAINSBOROUGH instead of REYNOLDS paint PUCK on a toadstool? The peasant children which are seen in GAINSBOROUGH's landscapes are far more racy of the soil than those of his rival, and indeed the President seems to have had as little love as Dr. JOHNSON for natural scenery.

We have not space to offer many remarks on GAINSBOROUGH's landscapes. But it may be mentioned that the Grosvenor Gallery contains the *Going to Market* (which has never undergone the restorer's operations), two copies of *The Cottage Door*, *The Harvest Waggon*, and sundry other works. They are all very beautiful, and the colours have stood well; but it must be said that GAINSBOROUGH was unable to emancipate himself from conventional treatment, which held sway in those days. The jagged and broken trunks of trees which figure in so many of his foregrounds are examples of that kind of tribute which a painter has to pay to fashion against his own good judgment. GAINSBOROUGH was a keen observer, and when walking with a friend was continually offering remarks on the transient phenomena of nature. He was therefore able to paint country scenes from memory, or with the aid of the broken stones, dried herbs, and pieces of looking-glass of which he made a kind of grotto in his painting-room. The peasant children which are introduced so happily in those scenes were also examples of the transforming power of his pencil. The originals might almost be called cockneys, for Sir MARTIN SHEE relates that they were taken from the family of a cottager in the neighbourhood of London.

#### A SPANISH SALE.

THE South Kensington Museum possesses many splendid examples of the art work of Spain, and among them are several of the jewels and personal ornaments which formed part of the offerings in the sanctuary of the Virgen del Pilar, at Saragossa. The bequest of the invaluable collections of M. le Baron DAVILLIER to the

Museums of the Louvre and Sevres recalls the circumstances under which the English museum failed to secure the most precious object in that sanctuary. The story should be memorable in the annals of the auction-room.

The city of Saragossa contains two cathedrals, of which the richest is known by the title of Nuestra Senora del Pilar. It is a medley of styles, but becomes impressive from the dim religious light. It derives its name from possessing a figure of the *Virgin* carved in wood, that stands on an elaborate pillar in a small chapel, thus marking the legend of a descent from Heaven in the year 40 A.D. The original temple which was so honoured was, according to the popular belief, constructed by St. JAMES the Apostle, the patron saint of Spain. In spite of its sanctity, the building was allowed to fall into a dangerous condition, and people were afraid to worship in it, as the columns and vaulting seemed to be likely to tumble on their heads. There was a decrease in the number of pilgrims, and consequently in the revenue of the clergy. The cost of reparation after so many years of neglect was found to be enormous, and there seemed, at first, to be no way to raise the money. The Spanish Government was appealed to for aid, but the national exchequer was, as is customary, in a state of deficit. Only one resource seemed feasible, and that was the collection of treasures which had been accumulated during many centuries. Although the French in 1809 had been exacting in their demands, there still remained many valuable reliquaries in crystal, chaplets of pearls, pectoral crosses set with precious stones, votive offerings representing heads, eyes, legs, and arms in gold and massive silver, the tributes which had been offered by the faith, the gratitude, and the devotion of Spanish pilgrims from time to time. The state of the building inspired its guardians for once with a sense of the necessity of promptitude; accordingly arrangements were made for an auction, catalogues of the collection were printed in Spanish and French, and forwarded to all the principal museums in Europe.

It so happened that the Baron DAVILLIER was at the time rusticating in Spain, and a friend apprised him of the forthcoming sale. The treasures of the Capilla Mayor were no strangers to him. He had often contemplated them with feelings of admiration and longing, and every object, from the sixteenth-century custodia to the golden statuette of a bull which had been given by the torero CUCHARÈS, was familiar to his mind. But what was most coveted by him was a famous casket in the form of a pomegranate, which when opened displayed exquisite carvings of the *Visitation* and *Annunciation*. This unique work was the most precious thing in the collection, and many a time visions of it appeared to M. DAVILLIER in his sleep. Need it be said that he appeared in Saragossa on the day appointed for the auction, and that he dispensed with the services of an agent?

The sale took place in a sort of chapter-house behind the cathedral, which was large enough to hold a couple of thousand people. At first the jewels were put up. The room was illumined with rubies, emeralds, Oriental topazes, hearts of sapphires, ear-pendants of brilliants, cameos formed in chalcedony, collars enriched with diamonds, decorations of Spanish Orders, amethyst pins, diamond bracelets, which once upon a time had been the tokens of Spanish magnificence, and of which a part may have formed the ornaments of Moorish princes or aids to Spanish beauty. In spite of the distance and discomfort of Saragossa, buyers were attracted and good prices were obtained. One small cross set with diamonds, which was a king's gift to the sanctuary, realised over three thousand pounds. South Kensington was able to obtain specimens of the jewellery, and especially of seventeenth-century work.

Everything in Spain is attended with deliberation, but even the stately slowness comes to an end in time. The Baron DAVILLIER, with all his experience of auction-rooms, was on the tenter-hooks. At last it was the turn for the pomegranate lot. The appearance of the casket excited the most intense interest, for it was supposed to be a national talisman, and the crown surrounding it was accepted as a symbol of royalty. Every foreign connoisseur was charmed with the colour of the enamel, the fine form of the casket, and its dainty workmanship. When it was opened, the red grains or seeds were found to be sparkling rubies. Accord-



ing to tradition it had been made by **BENVENUTO CELLINI**, and it was not unworthy of his hands. Before the auction a good diplomatist might possibly have secured the gem at a low price, for a local expert had valued it at no more than 200*l*. The biddings were taken with the customary tardiness, and to the Baron it seemed an age before the real contest for the prize was allowed to begin.

The Science and Art Department had deputed **Mr. WILLIAM CHAFFERS** to be its representative, and it was felt by **M. DAVILLIER** that in him his doughtiest opponent was to be found. It was therefore necessary to be careful in his tactics. But if we believe **M. ENDEL**, from whose little book much of our information has been derived, the English expert is not a linguist, and he could only make himself understood or be able to comprehend the situation by the aid of his rival. **M. DAVILLIER** accordingly found himself in the odd position of alternately bidding for and against himself, and the sale must have had a piquancy beyond the ordinary excitement of a sale-room. The people of Saragossa had never before witnessed opposition conducted on so romantic a principle, and it was felt that credit was alike due to the Briton for his confidence in his rival's honour, and to the French Baron for the courtesy by which he made his own position more difficult and infinitely more costly.

The speeches of the auctioneer delayed the biddings, but at last 2,000*l*. was reached. That was the limit fixed by the Science and Art Department, and **Mr. CHAFFERS** was compelled, with due recognition of his rival's worth, to give up the contest at the moment when it became most exciting. **M. DAVILLIER** was master of the field, and all eyes were turned to him. Instinctively he put his hand on the treasure for which he had so long yearned and fought so bravely. The auctioneer raised his bell, and amidst general silence began to utter the universal formula. "Once," "twice," were heard; the final word was on his lips when a man wearing a mask pushed his way into the room, and in a sonorous tone cried out, "A hundred reals more." Everyone turned to have a look at the mysterious bidder who had arrived so providentially, and possibly to some minds it may have seemed as if Heaven had at last interposed for the purpose of preserving the treasure for Saragossa. The effect produced on the Baron by the appearance of the new-comer was to make him resolve to bid no more. Wherever he came from, the man's entry appeared to be too melodramatic for the occasion, and unworthy to be associated with the disposal of the casket. The auctioneer expended the finest words in his vocabulary in appealing to the pride of Baron **DAVILLIER**, who was supposed to be the envoy of the French Government, but in vain. He urged that a champion who had overcome England and all its power should not in justice to himself succumb when he heard the voice of an unknown combatant. **M. DAVILLIER** was proof against all the eloquence of the rostrum. In the calmest voice he addressed the crowd somewhat in this way:—"Senor President and people of Saragossa,—You came here to witness a chivalrous struggle between England and France. You saw what followed. I imagine that the champion who has just entered is a chevalier of Saragossa. I believe that it is my duty to retire from the lists. I trust that the prize which you have kept for so long a time in your cathedral may remain there for many centuries, to recall the great events of your history. I renounce the happiness of possessing so marvellous a work." A speech conceived in so high a spirit of romance overcame the gravity of the Spaniards, and the Baron could hardly have won more plaudits if he had been a successful bull-fighter. There were cries of "Bien! Bien! Senor Estrangero!" and it was found necessary to adjourn the sale until the excitement had subsided. The fate of the casket was not yet decided.

The Chapter of the cathedral were far from being satisfied with so much enthusiasm. The chance of obtaining a large sum of money was gone, for whether the appearance of the masked stranger was a ruse to induce higher bidding, or was an effort on the part of enthusiasts to preserve the casket, the result was the same, and there was no addition to the restoration funds. The auctioneer was accordingly instructed to endeavour to persuade the Baron, and when the auction was resumed there was much talking before he pronounced the final word. But Baron **DAVILLIER** was

immovable, and when the bell sounded there was a fresh outburst of applause on finding that the casket was not to be taken among strangers.

The magnanimity of the Baron had, however, its reward. Ten years afterwards, a stranger who had the famous pomegranate under his cloak called on Baron **DAVILLIER** in Paris. A sale was accomplished, and now the famous casket, like the other works in his collection, belongs to the French people. The care that was exercised by the Baron in his selections might be inferred from the fifty Spanish works which he lent for the special exhibition in 1881 at South Kensington.

#### SIR F. LEIGHTON, P.R.A., ON ART STUDY.

THE annual meeting of the Canterbury School of Art was held on Thursday, the 22nd inst., and it was rendered remarkable by the delivery of an address by the President of the Royal Academy, who has hitherto held himself aloof from the schools of the Science and Art Department. The following is the address delivered on the occasion:—

Students of the School of Canterbury,—There are compulsions to which the most rigid rules must yield, and under such pleasant compulsions I am here to-night. I have been indeed forced, on various valid grounds, of which the most imperative is this, that any other course would be incompatible with the labours of a practical working artist—I have been forced, I say, to make to myself, and have hitherto strictly adhered to, a rule, to confine all prominent participation in functions like those which I am discharging to-night to the precincts of Burlington House. The fact that in obedience to this rule I have been obliged to decline many invitations like yours, makes it necessary for me, in courtesy to others, to say a word in regard to this infraction of my rule, at the risk even of being accused of egotism, and of telling you that which you are not concerned to know. Well, when my old and esteemed friend, **Mr. Sidney Cooper**, appealed to me in kindly urgent terms a short time ago, I felt that a case was before me of an altogether unusual character, one of which I could not, I will not say apprehend, but hope that it might repeat itself very frequently. For who is it that has required my presence to-day? It is a veteran artist, and a much-respected colleague of mine in the Royal Academy, who, having raised himself by his untiring energies and his unaided talents to the position he now occupies, turns, in the mellow evening of prosperous days, affectionately to the city of his birth; and, mindful of his own youth, has, in his generosity, opened up to the youth of this city resources which he did not enjoy, and incentives with which he was not borne up, in the hope that the art to which he is so earnestly devoted may profit, and the dignity of his native town be enhanced. Whether his bright example will be followed by others I cannot say, but that I should pay to it the tribute of respectful recognition, about that I have no doubt. But he has asked me not merely to have the satisfaction of distributing well merited rewards, but also to say a few brief words of sympathy and encouragement to the students of this school. Well, my young friends, let me say this at once. There is no sentiment which words bring straighter from my heart than that which binds me in sympathy to those who, like you, are starting on the way along the arduous path up which I am myself plodding, plodding with a purpose, indeed, in my advanced years, as firm as yours in your spring, but with impaired resources of wind and limb wherewith to approach those summits which are, I fear, scaled only in the dreams of youth. But to this feeling, which embraces all my young fellow-workers wherever their lot may be cast, another is added in the sight of a school rising like this of yours in a provincial centre and city. It is not merely that I rejoice to see art spreading her benign influences far and wide, and casting her seed over the broadest possible area; though, indeed, I cannot conceal from myself that the facilities of training offered to young artists, facilities which have increased in a quite marvellous degree within the last thirty years, carry with them danger as well as a boon—germs of bitter disappointment as well as a harvest of pure joys. I do not conceal from myself that art with her allurements draws within her bondage not only those whom nature has marked for her service, but that in her dazzling fires the wings of many a hope are withered and burnt up, for there is no calling in regard to which it is more needful, none in regard to which it is more difficult to discriminate with certainty between inborn gift and mere inclination. So much so that I doubt whether those in whose hands the guidance of the young rests have not as grave a responsibility in the direction of checking as in that of encouragement. Nevertheless to many, to the majority, the training brought within their reach is a boon, and I rejoice therefore to see that boon widely dispensed. But there is another reason why I am especially glad to see schools rising



in our provincial towns, and it is this: it is that in art, as in other forms of intellectual development in which personal individuality plays a leading part, I believe much in decentralisation. I believe that art has much to gain in variety, and, if I may use the expression, in physiognomy, by the development and assertion, not only of individual temperament, but of the wider distinctive characteristics of the various groups into which our countrymen are divided. Now this may perhaps in the present incompletely developed conditions of the art of England seem to you here a visionary demand, but the energies of schools should be turned towards an ideal future. A little reflection will remind you that the example of the past, and certain signs in the present, justify us in proposing to ourselves this ideal, many-sided national development. If you turn to the history of art in the fifteenth and sixteenth centuries in Italy, the land of its highest development since the fall of Greece, what do you find? You find that (decentralisation being absolute, the country being divided into numerous small states, each independent of the others, and indeed habitually at deadly feud with one or the other, so that the keen edge of their respective individualities was being constantly whetted in fierce antagonisms) each of these states has æsthetic expression in an art wholly personal to itself, thus imparting to the art of the country, viewed collectively, an infinite and most fascinating variety of flavour. This is of course an extreme case. Apart from the wholly exceptional gifts of the race, it is only in a country politically split up that such complete local diversity is possible. Such a combination of gifts and surrounding circumstances is not again to be looked for. Nevertheless, if we look at our own British art in its broadest features, we shall find for instance a marked and unmistakable distinction between the work produced in the two halves of the kingdom, which lie respectively north and south of the Tweed. And why does the art of the Scotch assert its distinctive characteristics within the body of English art? Simply because all sincere art mirrors the temper and mood of the men whose utterances it is. And so the Scotch, having strongly marked national attributes, their art, being sincere, partakes of this strongly characterised personality. In like manner, though not of course in like degree, the various portions of our southern realms, differing, often widely, in features of soil, climate, and race, and filled with local traditions of which they are proud, would, if art were developed to a complete, consenting, harmonious expression, send forth artists marked with a general and distinctive stamp, thus enriching and colouring the artistic life of the whole country. And let me here remind you of an important fact which should wing your courage and sustain you in your flight, namely, that not only have most of our greatest artists come to us from the purer air of the provinces, as, for instance, Reynolds, Gainsborough, and my brother Yorkshireman, Flaxman, but in one branch of art, landscape painting to wit, one county town, Norwich, has attached its name to a school. You have all heard of the Norwich School with its great lights, old Chrome and John Tell Cotman. Think of this, then, youths and maids of Kent, and see that round the feet of your majestic cathedral you plant the seed of a noble school, which shall bear the name of this cradle of Christian England. And what, you will ask, shall you do to raise your grand historic county to the artistic position you covet? I can tell you in answer no more than this: There is one quality without which you never may hope to do so, sincerity. Sincerity; that is the word which I should wish to survive in your memory as the echo and outcome of what you have listened to so kindly this evening. And let me ask you, further, to understand the word in its broadest and highest sense. I do not mean by its literalness in transcription of outward fact, though that, with some natures, will, no doubt, be the form sincerity will take. I mean truthfulness to your own individualities. To no two of those amongst you to whom it is given to be real artists will Nature whisper the same secret. To each, if he be attuned to hear, she has a special message, the possession of which, mark this, constitutes his artistic personality; and I would ask you to impress this truth on your minds, whatever be your gifts, that in proportion to the faithful sincerity with which you, who are privileged to be her interpreters, render that which she has put into your hearts, in that measure and degree will be your right to the artist's name, and your share in the great work of advancing the cause of art in your county, your country, and in the world.

#### GLASGOW INSTITUTE OF FINE ARTS.

THE annual report of the council of the Glasgow Institute states, that in spite of many adverse circumstances, the operations of the year as a whole have resulted favourably. At the close of the financial year on August 31, 1884, the amount of capital stood at 17,843*l.* 16*s.* 11*d.*, being an increase during the year of 485*l.* This increase results from the contributions of new members. During 1884, the Institute held only the

regular annual spring exhibition. The exhibition was one of fully average merit and interest, but bad weather and the dull state of trade told upon both attendance and sales, and the returns of the Institute from these sources was 200*l.* below those of the previous year. The number of works sold at the exhibition was 187, producing 4,583*l.* 18*s.* The revenue account shows a satisfactory improvement. On the year's operations there is a surplus of 58*l.* 18*s.* 5*d.*, arising mainly from decreased expenditure, increase in shop and gallery rents, and a saving in interest resulting from the repayment, mentioned in last year's report, of 2,000*l.* to the trustees of the late Mr. A. B. Stewart. Looking to the example set in other towns, and with a view to increase the public interest in the Institute exhibition, the council set on foot a scheme for establishing an art union in connection with the exhibition. The art union having been licensed by the Board of Trade is now in full operation, and the council recommend it most earnestly to the support of their fellow members. The present state of the membership is 493, of whom forty-eight have been elected since last report.

#### MR. RUSKIN ON MOUNTAIN FORM.

MR. RUSKIN'S introduction to "The Limestone Alps of the Savoy," by Mr. W. H. Collingwood, M.A., contains some very interesting reminiscences and notes. The introduction covers some two dozen pages, and at the outset Mr. Ruskin remarks that his friend's book is the fulfilment of a task which "I set myself many and many a year ago, and had been obliged by the infirmities of age with deep regret to abandon." The subject of the sculpture of mountains, he goes on to state, "the forms of perpetual beauty which they miraculously receive from God was first taken up by me in the fourth volume of 'Modern Painters,' and the elementary principles of it there stated form the most valuable and the least faultful part of the book. They had never been before expressed or even thought of, for the simple reason that no professed geologist could draw a mountain, nor, therefore, see the essential points of its form. So that at this very time being the large model of the valley of the Chamouni exhibited in the library of the British Museum is a disgrace not only to the Museum first and the Geological Society next, but actually it is a libel on the ordinary intelligence of human nature." The only member of the Geological Society who could draw a mountain in outline was, Mr. Ruskin declares, James Forbes, and he could not draw in light and shade; but his outlines were precise and lovely. Mr. Ruskin proceeds:—"After comparing notes with James Forbes at the village inn of the Simplon in 1849, I went up to the Bell Alp, then totally unknown, and drew the panorama of the Alps, from the Fletsch Horn to the Matterhorn, which is now preserved in the Sheffield Museum. Then going up to Zermatt I took the first photograph of the Matterhorn (and, I believe, the first photograph of any Alp whatever) that had then been made. On the work done in Zermatt at that time the mountain section of modern painters was principally based; but in 1861 I went into Savoy and spent two winters on the south slope of the Mont Salève in order to study the secondary ranges of the Alps and their relation to the Jura. I quickly saw that the elements of the question were all gathered in the formation of the mountains round the Lake of Annency, and at Tallories in the spring of 1862 made a series of studies of them, which only showed me how much more study I wanted. Being called to England I left the light blue lake with resolution of swift return, and the time of Troy-siege passed by before I stood again upon its brink among the vineyards." Mr. Ruskin then goes on to explain that in the meantime he had been able to do some useful collateral work. The summer of 1866, though principally given to "Proserpina," yet allowed him time, at Brientz and Interlachen, to trace the lines of Studer's sections across the great lake furrow of central Switzerland. "I learned enough geological German to translate for myself parts of his volumes which relate to the Northern Alps, and wrote them out carefully, with brilliantly-illuminated enlargements of his tiny woodcuts, proposing the immediate presentation of the otherwise somewhat dull book to the British public in this decorated form. A letter bringing me bad news interrupted me one bleak wintry day; and the since-untouched manuscript, with its last drawing only half-coloured, remains on the library shelf behind me like an inoffensive ghost." The study of mountain form was taken up with renewed eagerness on his retirement from his Oxford professorship in 1879, and he acknowledges the assistance he received from Mr. Clifton Ward, whose death in 1881 left him again discouraged and at pause, "in the presence of questions which had become by his help more definite, but in that very distinctness less assailable." Feeling also that his strength would no more permit him to climb the Swiss hills, he resigned the hope of doing more among the precipices of the Buet and Jungfrau, "and began, as better suited to my years, the unadventurous rambles by the streams of Yewdale."



But here again he was soon in need of help. Though still able easily enough to get to the top of Wetherlam and Silverhow, he had no time for the survey of the country in all the lights of evening and morning, as he felt to be necessary for the understanding of its essential features, and he entreated Mr. Collingwood, who had been at work for him on the bed of the retreating Glacier des Bossons, to come to his assistance at Coniston, and make a perfect model of the mountain group within a day's walk of Brantwood. Mr. Collingwood gave a summer to the task, and completed the model, "the best, I am bold to say," Mr. Ruskin remarks, "yet made of any part of the Lake district." The breakdown of Mr. Ruskin's health made a sojourn in Italy desirable, and after recrossing the Alps he asked Mr. Collingwood to review with him, "while the snows were yet high," some of the old problems "in the much-loved recesses of the Dorous and Tournette." Some interesting notes of the character and results of these studies follow, and Mr. Ruskin incidentally remarks that "geologists seem satisfied nowadays that the whole globe is a sort of flying haggis, or lava pudding, out of which, I see by Mr. Ball's lecture on the 'Corridors of Time,' the moon got pinched at the baker's." Mr. Ruskin contributes a reminiscence "of a real live hermit" he found in a cave two thousand feet or so above the valley of the Rhone. This hermit, in his "mossy and cressy retirement," he contrasts with the tormented existence of the modern travelling Eremit, "in caves which he has paid millions of money to dig that he may not see the Alps when he gets to them."

## TESSERÆ.

Vitruvius.

PROFESSOR DONALDSON.

VITRUVIUS is the only ancient writer treating specifically on architecture whose work has been preserved entire to the present period. The value in which he has been held by the moderns has been as various as extraordinary. Upon the revival of ancient literature in Italy, the treatise of our author was in high estimation, merely as a work of the ancients. It was natural, at a time when the literature of the country was in its infancy, to look up to the productions of the Greeks and Romans as models of perfection, having been produced in times when the human mind was more highly cultivated and refined, and endowed with the best fruits of a finished education. But there was another cause which gave him value, and this arose from the revival of ancient art also, which began to supersede the Gothic, Byzantine, Lombard, Tedesco, or whatever other style of architecture it may be called, which was then prevalent in Italy, and from the disorganised mass of Roman antiquities not having then been adequately studied, and consequently being very imperfectly understood. The various combinations which directed the conceptions of ancient genius had therefore not been discovered. When, however, a reference to Vitruvius brought to light the three divisions of species of columns and all that order and method of arrangement which he describes, he became of course the text-book of architects and writers upon architecture, and his dictum was held in absolute respect. This reference was, in subsequent times, rather perhaps the result of a blind respect for established opinion than the fruit of a minute investigation of the author himself, until at length a revulsion in the opinion of some arose; and of late it has been the fashion as much to depreciate his merits as it was formerly the practice to exalt them. This has been as unwise as it is unjust; for, although Vitruvius can by no means be considered as an author devoid of defects, yet it cannot be denied that he contains information connected with our art which exists not in other sources. Alberti, whose eminence as an architect it would be vain to attempt to depreciate, has made his work, "*De re ædificatoriâ*," but an amplification of that of the Roman, borrowing, as has been well shown by Straticò, whole paragraphs from an author which he has but enlarged. Pliny quotes him almost word for word, and it would be useless to attempt to cite the numerous references among moderns which are made to the books of Vitruvius.

### Safe Loads on Iron Columns.

B. B. STONEY.

Navier gives one-fifth of the breaking weight as the safe load in practice. Francis, an American engineer, also gives one-fifth, while Morin adopts one-sixth. My present opinion is that cast-iron pillars supporting loads free from vibration, such as water-tanks, will safely carry one-fifth of their breaking weight. In factories or stores, where moderate vibrations occur, the working load should not exceed one-sixth; and if the pillar be liable to transverse strains, or severe shocks like those on the ground floors of warehouses, where loaded waggons or heavy bales are apt to strike against them, the load should not exceed one-tenth of the breaking weight, or even less in some

cases, where the strength of the pillar depends rather on the transverse strain to which it is liable than the weight it has to support. For instance, the effect of wind on a light open shed supported by pillars may produce a transverse strain which will be very severe in proportion to the weight of the roof. The same thing may occur if heavy rolling goods, such as provision kegs or loaves of sugar, are piled up in such a manner as to cause horizontal pressure like that of a liquid. It is also necessary to take into consideration the foundations on which the pillars rest, for if these yield unequally one pillar may sustain much more than its proper share of load.

### Style in Drawing.

W. BURGESS, A.R.A.

The manner in which a man draws does and must affect the nature of his design more or less. Thus, if he uses strong thick lines, he will, in all probability, be induced to make his design massive and simple, and not give way to the vanities of crockets and pinnacles, because he will find that he has hardly got space to get them in. He likewise sees his design in its most severe and unfavourable aspect, and ten to one the building will turn out much better than the drawing, to the advantage of every one concerned. If, however, the architect draws in a moderately thick line, and puts in the stone joints and etches the walls (I am now speaking of elevations, &c.), he simply deceives not only his client, but, still worse, himself, for the building is almost sure to come out worse than the drawing—the joints, roughnesses, &c., not, of course, showing in new work. As to the third style of drawing, with very fine, hair-like lines, relieved by what is term back-lining, whereby small fillets are made to look like hollows, and hollows like fillets, this style is scarcely worth mentioning, for it means nothing.

### Iron Straps in Carpentry.

[T. YOUNG.

When it is necessary to employ iron straps for strengthening a joint, considerable attention is necessary that we may place them properly. The first thing to be determined is the direction of the strain. We must then resolve this strain into a strain parallel to each piece, and another perpendicular to it. Then the strap which is to be made fast to any of the pieces must be so fixed that it shall resist in the direction parallel to the piece. Frequently this cannot be done, but we must come as near to it as we can. In such cases we must suppose that the assemblage yields a little to the pressures which act on it. We must examine what change of shape a small yielding would produce. We must now see how this would affect the iron strap which we have already supposed attached to the joint in some manner which we thought suitable. This settling will, perhaps, draw the pieces away from it, leaving it loose and unserviceable. This frequently happens to the plates which are put to secure the obtuse angle of butting timbers, when these bolts are at some distance from the angles, especially when these plates are laid on the inside of the angles. Or it may cause it to compress the pieces harder than before, in which case it is answering our intention. But it may be producing cross strains which may break them, or it may be crippling them. The strap which we observe most generally ill-placed is that which connects the foot of the rafter with the beam. It only binds down the rafter, but does not act against its horizontal thrust. It should be placed further back on the beam, with a bolt through it, which will allow it to turn round. It should embrace the rafter almost horizontally near the foot, and should be notched square with the back of the rafter.

### Drying and Burning of Bricks.

H. CHAMBERLAIN.

The drying of bricks is a matter of great importance, and requires more attention than it generally receives. From hand-made bricks we have to evaporate some 25 per cent. of water before it is safe to burn them; thus in works producing 20,000 bricks per day, or 6,000,000 per annum, we have to evaporate more than twenty tons of water every twenty-four hours. The burning of bricks is exposing the dried brick to such a degree of heat as to change its character from that of a merely absorbent lump of dry earth, to a hardened, indestructible, partially vitrified mass, or artificial stone, which will withstand the action of the atmosphere. The effect of fire on clays or brick earth varies with the proportion and number of earths and salts of which they are composed, and the different percentage they bear to one another. Clay or pure alumina is infusible, but on exposure to great heat contracts freely in bulk. It is this property on which the principle of Wedgwood's pyrometer is based. Alumina combined with silica, or alumina combined with lime, will withstand the most intense heat which can be obtained in a furnace; but a mixture of these three earths will melt at a very low heat, the lime acting as a flux on the silica; and, according to Dr. Ure, in his "*Dic-*



tionary of Arts," the more readily the nearer the mixture approaches the following proportions, viz., alumina, one-fifth, lime, one-fifth, and silica, three-fifths; by adding two parts more of sand it becomes one-seventh alumina, one-seventh lime, and five-sevenths silica. The Devonshire and Dorsetshire plastic clays are composed of silica, three-fourths; and alumina, one-fourth. They burn very white, and form the basis of earthenware. According to their composition, therefore, very varied are the degrees of temperature to which bricks must be exposed in burning; thus, those made from London clay about Uxbridge take from 10 degs. to 15 degs. Wedgwood to burn them sufficiently hard. The firebricks of Stourbridge take 85 degs.; the vitrified blue bricks of Staffordshire, 95 degs.; and the vitrified bricks of North Wales require 120 degs. of Wedgwood, or the same heat as an iron smelting furnace. The general colour of burnt bricks is red, owing to the clay containing a little iron; but where the percentage of this substance is larger the colour of the brick is blue, as in Staffordshire, Shropshire, and Worcestershire. For burning bricks we have to employ the utmost care and attention, in exposing them to as high a heat as they can stand without endangering their melting. If they are not sufficiently burnt they will be very absorbent, and will retain sufficient moisture for a frost to destroy them.

#### The Difference between Architecture and Building.

SIR WILLIAM CHAMBERS, R.A.

It is not to be imagined that building, merely considered as heaping stone upon stone, can be of great consequence, or reflect honour either on nations or individuals. Materials in architecture are like words in phraseology, having separately but little power, and they may be so arranged as to excite ridicule, disgust, or even actuate the mind with unbounded sway. An able writer can move even in rustic language, and the masterly dispositions of a skilful artist will dignify the meanest materials, while the weak efforts of the ignorant render the most costly enrichments despicable.

#### The Sculpture of the West Front of Wells Cathedral.

PROFESSOR COCKERELL, R.A.

Regarded in the right spirit, we shall wonder at the inexhaustible resources of the artist in delineating the various and opposite characters of his multifarious composition—in which no two are to be found alike, and in each of which we find the appropriate idea—and the fulness of embodiment which sustains the *dramatis personæ* throughout, with an untiring energy of impersonation in costume, symbol, and action, which excites our warmest admiration. We have the sanctity of the monk, the meekness and abstraction of the supreme pontiff; the archbishop; the pious energy of the bishop in the act of benediction; the prudent abbot; the devoted anchorite; the haughty and imposing king; the stark conqueror fiercely justifying his usurpation; the placid and impassable Confessor administering his good old laws; the lusty, but hapless "Iron-side"; the intrepid Harold, encased in mail; the king, defender of the faith, treading upon the fallen Pagan; the comely, gallant prince and lover; the devout nun; the majestic queen benefactress;—who have retired from the pomps and vanities of the world; the lovely bride of Henry I., "the fair maid of Brabant," the theme of the troubadour; the inspired evangelist, or the malignant sprite; each and all discovering a racy energy of conception, which the informed artist may envy. And though sometimes pushed almost to caricature, the better to explain the person, in keeping with the grossness of that day, these works contain, beyond all doubt, lessons to the artists of our times which ought not to be declined.

#### Sculpture in Marble.

RICHARD WESTMACOTT, R.A.

If the model is to be copied in marble or stone, the first step is to procure a block of the required size. Two stones called "scale stones" are then prepared, upon one of which the model or plaster cast is placed, and upon the other the rough block of marble. The fronts of these stones have figured marks or "scales" exactly corresponding. An instrument, capable of being moved by socket-joints and movable arms, is then applied to the scale-stone of the model, and a projecting point or "needle" is made to touch a particular part of the model itself. This is carefully removed to the scale-stone of the rough block, and the marble is cut away till the "needle" reaches so far into the block as to correspond with the "point" taken on the model. A pencil mark is then made to show that the point is fixed. This process is repeated all over the model and the block till a rough copy or shape of the model is entirely made. These "pointing" machines are not always precisely alike, but the principle upon which they act is exactly similar in all. The statue being thus rudely shaped out, the block is placed in the hands of a superior workman called a carver, who copies the more minute portions of the work by means of chisels, rasps,

and files, the pencil marks showing him the precise situations of the parts, and the limits beyond which he is not to penetrate into the marble. When the carver has carried the work as far as the sculptor desires, he proceeds himself to give it the finishing touches, improving the details of form and expression, producing varieties of texture, and harmonising the whole. The rich quality of surface that appears more or less in works in marble is produced by rubbing with fine sand or pumice-stone and other substances.

#### Flemish Bond a Misnomer.

PROFESSOR HOSKING.

Neat work, in fact, can be produced more easily with "Flemish bond," but "English bond" has the reputation of being the best bond structurally. Why the two arrangements should be distinguished by the names they bear is a matter of uncertainty; at least, it is unknown to the author, who supposed, in common with most other people with whom he has conversed upon the subject, that alternate header and stretcher in the same course was the practice in Flanders, and generally in the neighbouring countries on the Continent, whilst the term "English bond" seemed to imply that the arrangement which bears that designation is peculiar to England. A visit made a few years ago to the country where "Flemish bond" ought most to abound, if the name be properly applied, enabled the author to observe what had never, to his knowledge, been remarked by any person who has published his remarks, and what was quite unknown to every one to whom he has stated since his return what he had observed. At Rotterdam and at the Hague, at Antwerp, at Brussels and at Liege, at Cologne, at Mayence, and at Frankfurt, and again throughout the north-eastern parts of France, brick walls are built according to the arrangement distinguished in England as "English bond," and "Flemish bond" unknown—at least no single example of it fell under the author's observation in any of the towns and countries indicated, although his attention was called to the subject by the quay walls at Rotterdam before he set foot on shore.

#### Construction of Observatories.

AMEROSE POYNTER.

In the construction of buildings devoted to the purpose of astronomical observations, the most important requisite is to provide against the effects of vibration on the apparatus. Any contact with the floor or other portion of the building would not fail to produce, upon the slightest movement, concussions which, multiplied by the magnifying power, would render the telescopes useless. The mode of adapting the building for its peculiar use is by rendering it independent in all its parts of the piers upon which the instruments are fixed. The foundations of the latter are also laid as deep as possible, in order to obviate the effects of vibration from external causes, against which, however, it is not always practicable to guard, the mere tread of a foot-passenger being often sensible to an observer using a powerful telescope at a considerable distance.

#### Ancient Use of Vermilion.

WILLIAM LINTON.

Native cinnabar or vermilion, a sulphuret of mercury, was first prepared by Kallias, the Athenian, five hundred years before the Christian era. There was a minium or cinnabar wrought in Spain from stone mixed with silver sand; also in Colchis, where they disengaged it from the fronts of the high cliffs by shooting arrows at them. Pliny and Vitruvius call it minium, and Dioscorides observes that it was falsely thought by some to be the same as minium. Vermilion is the colour with which the statues of the gods were painted. It was abundant in Caramania, also in Ethiopia, and was held in honour among the Romans. Their heroes rode in triumph with their bodies painted with vermilion, and the faces of the statues of Jupiter were coloured with this pigment on festal days. The monochrome pictures of the ancients were wrought with it. There was also an artificial kind of cinnabar, a shining scarlet sand, from above Ephesus. Vitruvius and Pliny say that vermilion was injured by the light of the sun and moon. To prevent this result the colour was varnished by a mixture of wax and oil. Sir Humphry Davy found vermilion in the Baths of Titus.

#### THE SURVEYORS' INSTITUTION.

AT the preliminary examination which was held of the candidates who presented themselves on the 20th and 21st inst., the following candidates satisfied the examiners, viz., Messrs. Archibald, Beard, Bensley, Brown, Buss, Champion, Chew, Coales, Cokat, Eves, Fitz-Hugh, Goodman, Gough, Green, Harding, Jenkins, Jonas, Jones, Lloyd, Lumley, J. B. Mann, R. B. Mann, Mathews, Newton, Nicholson, Nockolds, Parry, Paterson, Pratt, Rand, Robinson, Selby, Smurthwaite, Varley, Vaughan, Webb, Wilkinson. Mr. Henry Lewin Jenkins passed at the head of the list.



## NOTES AND COMMENTS.

THE "Union Artistique" is the Paris club wherein artists and amateurs most do congregate, and the annual exhibition is a sort of forerunner of the Salon. On Monday next the exhibition opens. This year there is an increased amount of dissatisfaction among the amateur members on account of the stringency of the arrangements. The committee considered that the limited wall space in the club gallery would be better occupied with works by eminent painters than by the products of praiseworthy efforts of titled and rich folks to overcome *ennui*. Paintings by amateurs are excluded, and it will not be surprising if the treasurer of the club finds that all the annual subscriptions of three hundred francs are not renewed.

A MEETING has been held in the chapter-house, St. Paul's, to organise a committee and obtain subscriptions for the erection of a memorial of the late Bishop of LONDON in St. Paul's Cathedral. Dean CHURCH, who presided, said they had undertaken to recommend the simplest, the most personal, and the most old-fashioned kind of memorial—that was, a monument in St. Paul's. There was something grateful to the sense of loss in the fact that such a monument was not utilitarian, but appealed to the imagination and the feelings. Whatever else might be proposed, this, at any rate as far as they were concerned, was the first step. It was resolved that the monument should take the form of a recumbent statue. The estimated cost will be about 3,000*l*.

ABOUT a month ago several tenders were sent in for the enlargement of a dry dock at Ostend. It was subsequently discovered that one by M. GOOSSENS, of Schaerbeek, was excluded because the provincial governor at Bruges believed that the letter did not arrive at the time appointed. On investigation it was ascertained that the delay had been caused by an oversight in the chief post-office in Brussels. The postmaster at Schaerbeek has certified that the letter was received by him and duly registered at such an hour that under ordinary circumstances the letter should have reached its destination in time. It so happens that M. GOOSSENS' tender was lower than the others. The cause is under the consideration of the Government.

THE partition of an estate among a few heirs in proportion to their respective rights is not a difficult operation to a surveyor having experience and prudence. But the lawyers with customary ingenuity contrive to make it expensive. Mr. Justice KAY on Saturday last referred to the case of a mountain property in Wales, which contained twenty-seven acres. It was divided lately, and the taxed costs amounted to 65*l*. The surveyor's work probably cost about 5*l*. The better course in a case of this kind would be to sell the estate. It is no wonder that the judge declared the transaction to be an utter scandal to our system of procedure.

THE German lithographers, like the majority of trades in the empire, are endeavouring to carry off orders for work from this country, and are glad to accept them, however insignificant they may appear. We have heard that commercial travellers from the Fatherland have been soliciting such small things as the fancy labels for buttons and gim-crackery in Birmingham, and the majority of the Christmas cards which have been lately seen in shop-windows are of German origin. At the present time there are probably a hundred of these men seeking orders for printing and lithography in London alone. In spite of the reputation which the French lithographers possess, the Germans are endeavouring to compete with them in Paris and throughout the country. As a means to retain the trade, it is proposed to establish a special art school for lithographic draughtsmen in Paris, and the municipal authorities have voted a sum in support of it. The Ministers of Commerce and Public Instruction have also given their support to the project.

ONE of the most effective arguments against waste in the combustion of coal, and the consequent fogs of the metropolis, is furnished by a statement of a Governor of

the Gas Light and Coke Company. The fog on the 20th inst. was not exceptionally thick, nevertheless 96,000,000 cubic feet of gas were supplied from the Company's works during twenty-four hours. The amount was an increase of 37 per cent. over the supply required for an average day in January. The cost to the customers of the Company for the extra amount of gas required for that one day was 5,250*l*. As nine thousand five hundred tons of coal had to be carbonised in order to produce the gas, it is not surprising that in the north of England mining engineers are foreboding the exhaustion of the coal-fields within a calculable period.

THE villa in the isle of Elba which was occupied by NAPOLEON after his abdication has been purchased by the Jesuit Fathers. It is their intention to convert this historic mansion into a college.

THE returns of the Corporation surveyor of Birmingham denote a slight increase in 1884 over 1883 in the number of plans of buildings which have been submitted for approval. In 1884 there were 1,285 plans, and in 1883 fifty less. The number in 1882 was only 963, which was a large falling off from 1,594 in 1881, thus exemplifying the state of trade. Improvement in Birmingham may be taken as an omen of the state of trade in other parts of the country, and accordingly the figures mean more than may appear at first sight.

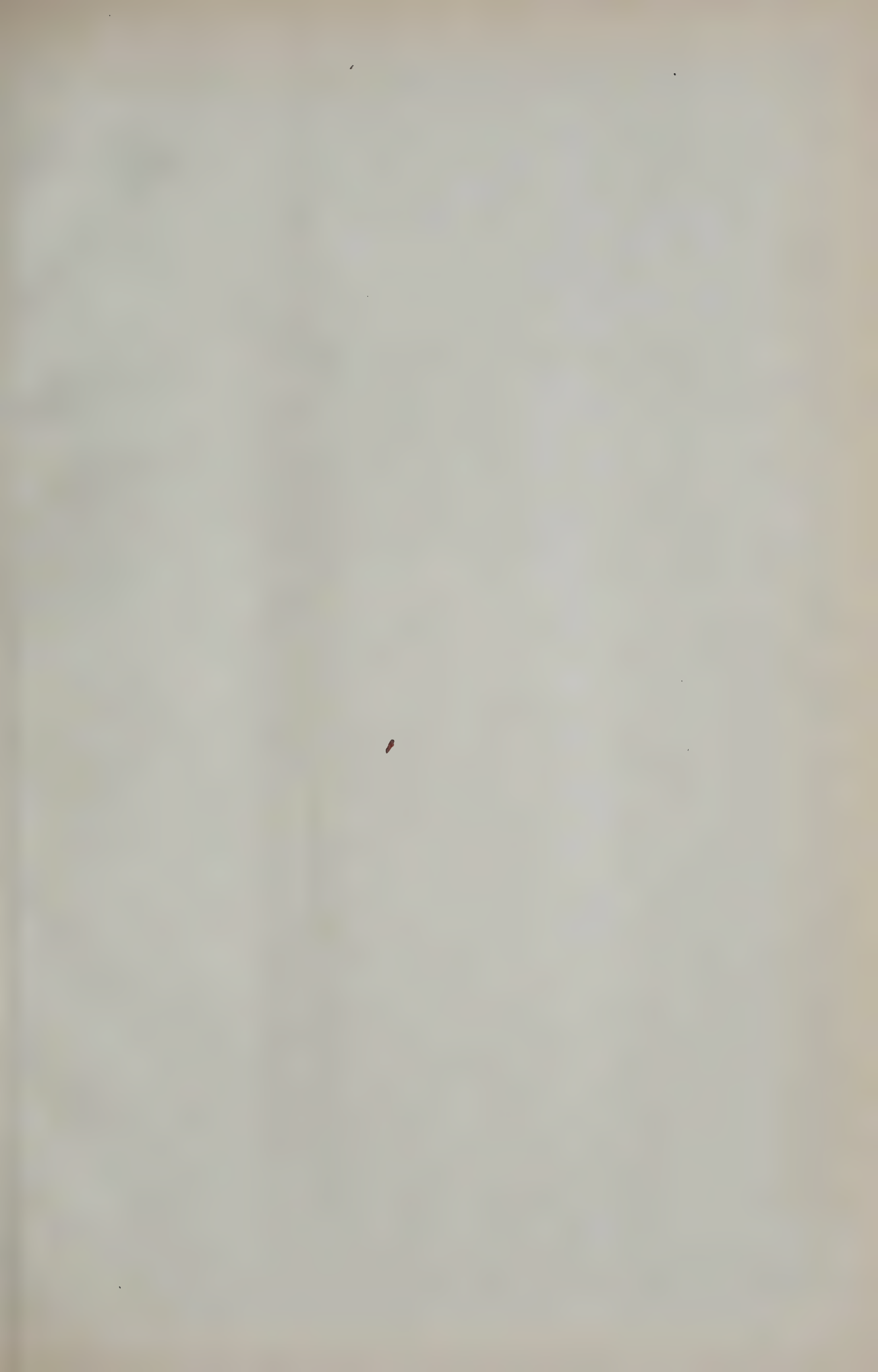
THE severe regulations for the admission of pictures in the International Exhibition of Antwerp have given dissatisfaction to many painters. It is, therefore, proposed to organise a rival exhibition at Brussels, and the younger artists of Belgium have promised their support. The result will be a modification of the official regulations. In connection with the Antwerp exhibition, it is proposed to organise a lottery on a large scale in order to obtain means to send workmen from all parts of the kingdom to Antwerp during exhibition time.

MR. W. D. MCKAY, R.S.A., is advocating a redistribution of art treasures, and that the national collections in London should be divided and placed proportionately, according to value, in the capitals of the three kingdoms. The principle Mr. MCKAY adopts for a standard for the partition is the relative proportion of purchase money which has been contributed by taxation. But he admits that as England has paid about five-sixths of the whole, the Gallery in Trafalgar Square should have a preponderance of works. There is a good deal to be said for the proposal, and the Trustees of the National Gallery will no doubt have their attention drawn to it, but we hope it may not influence them against lending works to the Scottish Gallery.

THE French claim the invention of gas-lighting for a countryman—PHILIPPE LEBON. It has been resolved to erect a statue of him before the Hôtel de Ville at Chaumont, his birthplace. There was a competition lately for it, and M. PINCH has obtained the prize. A sum of 19,000 frs. has been placed at his disposition by the committee to defray the cost of execution of the statue.

THE following arrangement has been adopted in the Palace Hotel, San Francisco, for the purpose of protecting the building from the effects of earthquake shocks. A series of iron rods, hooked together, were extended under each floor, north to south and east to west, from one outward wall to the opposite one. Beyond this the massive beams were sawn to the thickness of about six inches their whole length, and then bolted together. The effect of this would be that, on a severe undulation, each portion of this enormous building would help to bind together and uphold the other, while any strain and crack of one part of the beam would not of necessity extend to the other part. The hotel is of massive construction, with walls 4 feet thick; but according to BASIL HALL, the traveller, the only houses that stand shocks are those built of the lightest materials and connected in the most superficial manner with the ground. All the rest, with deep foundations and thick walls, being rivetted as it were to the surface, were exposed to the full violence of the movements.













"INK PHOTO," SPRAGUE & CO., LONDON.

## THE GUITAR PLAYER .

FROM THE PAINTING BY CHARLES SPRAGUE PEARCE.













*St. Michael's, London*





OF PRINCE SCHWARZENBERG.  
FRONT.







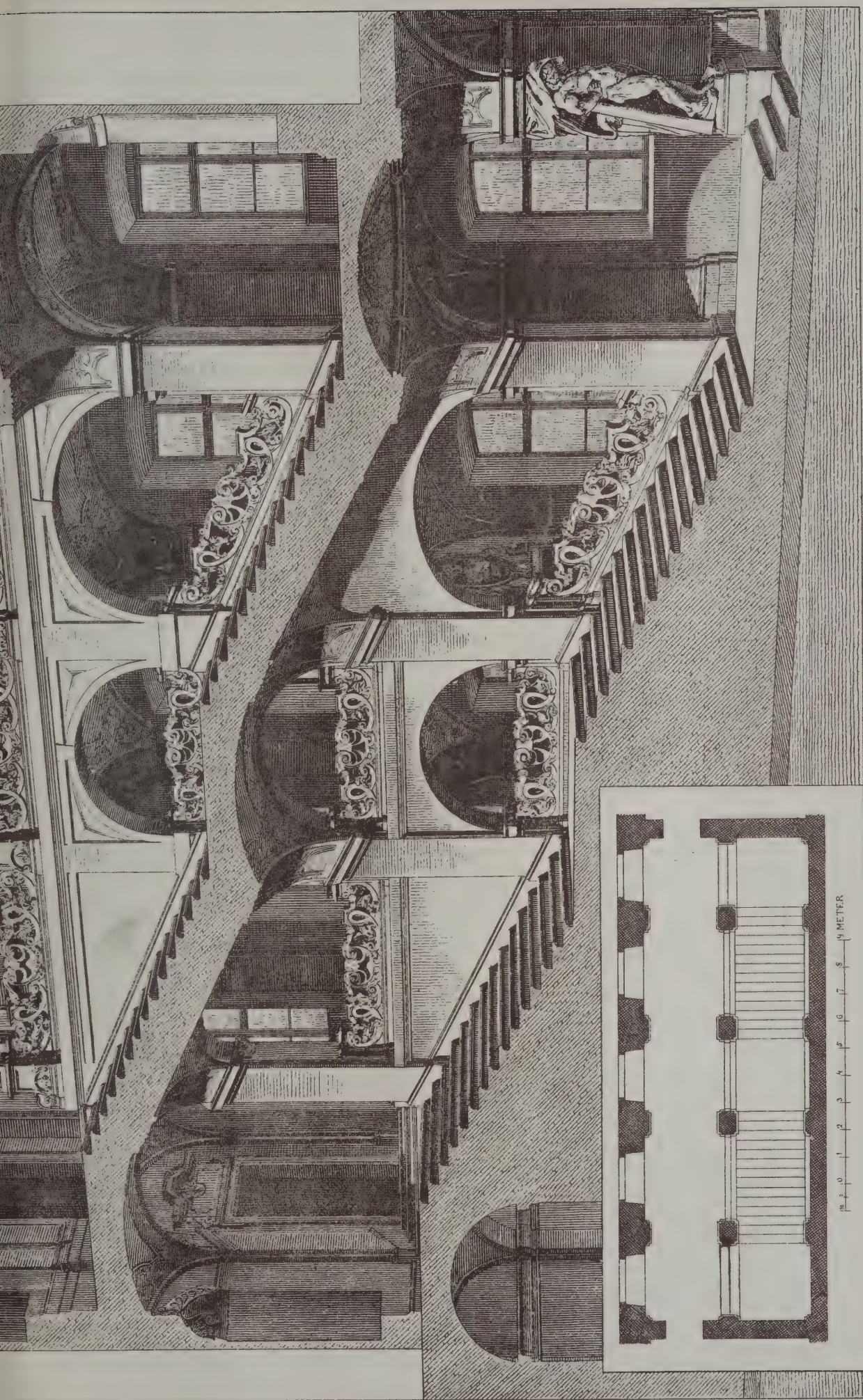




The Architect Jan: 31<sup>st</sup> 1885.







*Spillmann & Co. Wien, 1860*

# AUSTRIAN ARCHITECTURE: PALACE OF PRINCE KINSKY.

SECTION THROUGH GRAND STAIRCASE.







## ILLUSTRATIONS.

## THE GUITAR PLAYER.

THE American painters who live in Paris may well be considered as picked men, and it is no easy task to uphold a competition against French artists. Mr. C. S. PEARCE is one of the youngest and ablest of the band, but his pictures are always to be found placed by French juries in good positions in the Salon. The fine *Guitar Player* will suggest his style.

1. THE PALACE OF PRINCE SCHWARZENBERG, VIENNA.

2. THE PALACE OF PRINCE KINSKY, VIENNA.

WORK, which deserves to be called magnificent, is now in course of publication in Vienna. It is illustrative of the palaces in the city belonging to the Austrian grandees, and has been produced with the approval of the Minister for Education by Professor G. NIEMANN, the architect. The pages measure about 26 inches by 20 inches, and are all engraved on copper from the Professor's measured drawings. We have reduced two of the plates in order that they may give a better notion of the character of the originals than is possible from a verbal description. There are five large plates in each part, and the price to subscribers is only six marks.

Professor NIEMANN selects the buildings which represent that free interpretation of Italian or Classic work called "baroque." Each palace is a new variety expressing a fancy that was not always restrained, and there is a resemblance between some of the parts and those which are found in country houses erected in the eighteenth century in this country.

One of the views shows the palace of Prince SCHWARZENBERG, which is a well-known object in Vienna, standing as it does at the corner of two roads and facing a street. There is a very long garden attached to the building, and it is the garden front which is seen in the illustration. The second building is Prince KINSKY's mansion. The frontage is narrow, but the interior is palatial, and throughout much of it the effect is derived from sculptured figures. Professor NIEMANN's plates are interesting and valuable from the subjects, and as examples of architectural draughtsman-ship.

## ART AS A PROFESSION.

ON the 22nd inst., Sir W. Fettes-Douglas, the President of the Royal Scottish Academy, distributed the prizes to the students of the Edinburgh School of Art. In addressing the senior students who might be thinking of adopting art as a profession, the President said:—I am not one of those who profess to hold art genius very high; but unquestionably the artist must possess a certain volume of general capacity, certain special qualities, and a keen love for his art, and the student devoting himself to it as a profession must remember not only that he has chosen it as an intellectual study, but has to master it as a bread-winner for life. While it is always a very serious question with the young what trade or profession they will commit themselves to, a decision in favour of art is peculiarly dangerous, because few who do so have afterwards the courage to change, even when glaringly unsuccessful, but drone on to the end of the chapter, dissatisfied, and it may be beggared, men. If I am asked how the student is to acquire the necessary knowledge of himself and his powers, I must reply, it is no doubt difficult; but he ought not to seek it through the admiration of friends; and for once let him even ignore the approbation of parents, which in this matter is worse than useless—is, in fact, deleterious and demoralising. If he knows how to profit by them, let him listen to the sneers, the jibes, and even the praise of his fellow-students; their opinions in the main are honest and not incompetent. It is not only of the most vital importance to the student that he should consider thoughtfully what his general capacity and his abiding love for art may be before he chooses it as a profession, but he must exercise some judgment in his line of action, his choice of subjects, when in experience and knowledge he may fairly term himself an artist; and this entirely irrespective of his innate ability, as neither judgment nor common sense necessarily accompany talent or genius. I think the young artists of to-day are in this matter, as in many other things, in advance of my contemporaries of forty to fifty years ago. I remember very well we all commenced independent art with a very high flight indeed. Whatever the student's tastes or tendencies might be, his first exhibited picture—or,

rather, the first picture he offered for exhibition; many of you will, I dare say, understand the distinction—had its subject taken from Milton's "Paradise Lost," or the sublimer books of the Old Testament. The student then condescended to the soberer scenes of national history or the more severe and striking points in the Waverley novels. I well remember the Master of Ravenswood was a great favourite. After some years' work upon subjects of this kind the fire of his imagination became damped, and, assisted probably by the stimulus of a hungry stomach, he tried his powers—generally more successfully—on familiar subjects and cottage-door scenes. Sometimes the illustrator of Milton became a landscapist, and when the worst came to the worst he could always turn a critic. The student painter of the present day is much less ambitious. The whitewashed gable of a cottage, sans door, sans window, with an amorphous tree supporting it, is his first ambition, and apparently embodies the full outcome of his imagination and fancy. In a year or two he extends the scope of his subject by adding a water-barrel, a cart without a horse, a few cabbages or the like, and finally ventures to introduce a something, without form or comeliness, which does duty as a figure. Simple, even paltry, as many such subjects may seem, they contain in their treatment the germs of a truth to nature unknown to the artists of fifty years ago. Yet something may be said for the students of the older school. By painting subjects too high for their powers they had to attend to their drawing, and continued to study the antique long after the practice of their successors leads them to abandon what they seem to consider schoolboy practice. Apart from the fashion of the day, which influences art—I am sorry to say much more than it is influenced by art—the artist must endeavour to choose such subjects as will enable him to do justice to himself—that is, to his own powers; and a knowledge of what he can do and of what he cannot do is the most desirable of all knowledge either for the man or for the artist. Long years ago I knew a painter of much ability who painted animals, and especially barn-door fowls, with infinite beauty. Unfortunately, he became possessed with an idea that he was intended for better things. *The Hosts of Heaven, Satan Addressing His Legions*, and such like subjects, were the only pictures he could be persuaded to paint; and when a lover of art went to him to get a few cocks and hens, he was offered *A Council of the Gods on Mount Olympus*, or *A Scene in Pandemonium*. Of course the proposing purchaser went away pictureless, and shrugging his shoulders, leaving the artist swearing at his want of taste, when he ought rather to have sworn at his own lack of sense, setting aside the folly in his choice of subjects. I must admit that my unfortunate friend, while he could paint ducks delightfully, could impart neither fire to his fiends nor light or love to his angels and archangels. Before long people ceased to ask for what he refused to give, and he was neglected and forgotten. The painter of whom I have spoken was not, however, a student, but a very accomplished artist, and in his folly he sinned, not only against himself, but also against his family, who suffered severely, and against society and political economy; for whereas his earlier works were sought for and highly valued, and likely to remain valuable, adding not only to his individual wealth, but to the wealth of the world at large, his latter productions were worthless, and have been burnt and destroyed long ago. I may add *en passant* that he was not an Edinburgh man, or in any way connected with Scotland.

## EDINBURGH ARCHITECTURAL ASSOCIATION.

THE usual fortnightly meeting of the Association was held on Monday, the president, Mr. G. Washington Browne, in the chair. Mr. Henry H. Gunn read a paper on "Geology in its relation to Architecture." Referring to some of the benefits which architecture had reaped from the prosecution of economic geology, he said that from the Laurentian to the recent period, and he might say to the present time, geological agency had been greatly instrumental in furnishing those materials which so much tended to the embellishment and comfort of our homes. Having described the useful minerals obtained from the various rock formations, he traced the history of the transition from one form of dwellings to another, beginning with primitive man and following the narrative up to the present age of advanced civilisation. With the discovery of bronze, doubtless, came the earlier employment of stone in buildings; and when they considered the enormous blocks that were extracted by the early Egyptians with bronze tools they were lost in mingled admiration and wonder. It was highly probable that the earlier workers of stone were acquainted with some means of tempering copper or bronze, without which it was hardly possible to conceive in what manner they could have produced the results which were to be found in the ruined cities



of ancient Egypt and of Thebes. The precise period at which iron came to be employed in the arts was lost in dim obscurity, but there was no doubt that its discovery was one of the greatest boons to mankind, for on its application was founded every important step which marked the progress of the human race from barbarism to civilisation. The lecturer proceeded to enumerate and describe those metals and their products which were of chief importance to the architect, and which embraced iron, copper, lead, zinc, and tin. Silver and gold were employed only to a slight extent in architecture, although in ancient times they were largely used in the decoration of temples. At the close a vote of thanks was awarded to Mr. Gunn for his paper.

### GREEK INSCRIPTIONS.

A COURSE of six lectures on "Ancient Greek Inscriptions" is in course of delivery at University College, London, by Professor Newton, of the British Museum. In the first lecture the professor said that ever since writing came into general use among the Greeks, say from 600 B.C. to the latest period of the Roman Empire, it was their custom to engrave on some permanent material all their public documents, such as laws and decrees, treaties, letters from foreign states, kings, emperors, and other potentates, registers of state treasure and public accounts, dedications to the gods, and the like. The material on which these documents were engraved was usually marble or limestone, which abounded in the eastern part of the Hellenic world. In Italy and Sicily the material used was more frequently bronze, and hence the comparative rarity of inscriptions in the cities of Magna Græcia and Sicily. In order to form an idea of the wealth of inscribed monuments in a Greek city of any political importance, we should imagine an intelligent foreigner, say a merchant from Alexandria, Sidon, or one of the Greek cities in the Black Sea, visiting Athens in the second century before Christ. From the moment of landing at the Piræus to the termination of his visit this foreigner would have seen on every side the monumental record of the past history of Athens. Those documents which we bury in Blue Books—statistics at large, Foreign Office archives, canons, and rubrics—were patent everywhere. At the Piræus the stranger would have seen engraved inventories of the ships and naval stores of the Athenian navy, and the contract, with exact specifications for the building of a place for naval stores in the arsenal. Ascending from the Piræus along a road, at the side of which he would have seen sepulchral monuments commemorating the illustrious dead, the stranger would have reached Athens, where his first visit would naturally have been to the Acropolis. Within that hallowed precinct he would have seen not only on separate columns (*stelæ*), but on the walls of the Parthenon, and other public buildings, the imposing record of the greatness of the Athenian Empire; the offering to the gods dedicated by victorious commanders in memory of battles by sea and land; the treaties and alliances which were the fruit of those victories; the honours accorded to public benefactors, native or foreign; the lists of the State treasure stuck up in the Parthenon and the other temples; the public accounts, with which were included the contributions levied by Athens on the cities of the confederacy formed for the defence of Hellas after the Persian war. Descending from the Acropolis the stranger would have seen at its foot the long row of bronze tripods dedicated by the victors in dramatic, lyrical, or musical contests, and the whole system of gymnastic and agonistic training recorded year by year in a series of decrees relating to special festivals, with lists of victors and dedications in gratitude to the gods to whom they owed their prowess. If, lastly, passing through streets crowded with statues of gods, heroes, and illustrious men, the stranger had issued forth from one of the city gates into the country round Athens, he would have walked along roads flanked on each side by a row of tombs, each inscribed with the name of the person or family buried, together with the name of his "deme," or, if a foreigner, of his country, and in the neighbouring fields he would have seen the boundaries of each man's property carefully defined by pillars on which were engraved the name of the owner, with the additional information, in case of mortgage or marriage settlement, that the land was subject to it. The inscribed monuments of Athens here noted must be a very small part of what once might have been seen; but they have this special interest, that for us, as for the ancients, they still exist, in a condition more or less complete. In the present state of our knowledge of Greek epigraphy we may confidently assert that inscribed monuments of equal, and perhaps of greater, interest abounded in every Hellenic city of any political importance, and there is good ground for supposing that a considerable salvage of their remains will be accomplished as systematic excavations on ancient sites are carried on on a more extended scale. The lecturer then referred to the efforts made by learned men in the Alexandrian period to preserve from oblivion the precious historical materials

contained in inscribed monuments, and concluded by an earnest appeal to all who are interested in archæology never to fail to copy inscriptions when they are exploring Greek sites; and further, he would exhort the owners of sculpture galleries to make a careful examination of all marbles, whether cast forth into holes and corners of gardens, rock-work, or mouldering in London cellars. Moreover, there must still exist letters and diaries of English travellers in the Levant containing copies of inscriptions which have never seen the light since the last century. In a diary recently placed in the lecturer's hands, and bearing date 1737, he found a most interesting inscription from Halicarnassus, not published till after he recopied it at Budrum, in 1855. There may be many more such unpublished treasures in family archives.

### HOUSE TENURE IN GERMANY.

THE report on the system of tenure in Prussia and Germany generally, which was prepared for the Foreign Office at the English Embassy, in Berlin, says that house property is invariably held in freehold tenure, and the system of letting land on long building leases is practically unknown. This is supposed to be due to an old principle of law by which "sale breaks lease," and no person would be disposed to erect, at his own cost, a permanent structure on a piece of ground held on such uncertain tenure. An eminent legal practitioner in Berlin, who is conversant with such matters, was consulted, and he gave the following reply:—In general terms the rule of law is that—1. Plots of ground—leaving out of consideration cases where they are leased for temporary purposes for specified terms—can only be sold as freehold property. The old "institution" of heritable leases ("*Erbpacht*"), ceding the usufruct of a piece of ground in perpetuity in return for a yearly rent, was abolished in the year 1850. 2. The law places no restriction on the subdivision at will of such ground into any number of larger or smaller lots, or on the sale of such lots.

The only restrictions to which an owner would be subject who was desirous of building on such lots in country as well as in town districts would be:—(a) Legal restrictions, in the case of buildings for commercial or industrial purposes and the like, imposed for the purpose of preventing any prejudice to the convenience, safety, or health of the public. (Imperial trade regulations.) (b) Police restrictions, imposed with the object of securing proper access to the dwelling-house, and its proper sanitary condition, and further to provide for the arrangements of the structure being kept strictly within the limits of any plan which may have been fixed or approved by the municipal authority. (Building regulations.) (c) Private restrictions, arising out of any covenant or agreement, which may have been entered into between vendor and purchaser as to the description of building to be erected, or the use to be made of the ground sold. Agreements of this description are quite admissible in law when not opposed to the public interest, or in violation of the State Laws or Police Regulations. They are binding on the legal successor in title of the purchaser only when entered as limitation of title in the property in question in the ground register ("*Grundbuch*") in which the property thus limited is duly entered. The sole persons entitled to demand the observance or fulfilment of such restrictions on the property would be the owner of the ground duly registered as conferring such right, the original vendor of the property, or his successor in title, to whom the right to do so has been expressly conveyed. No other person, not party to the original contract, nor subsequently made a party to it by express act, can claim any power to enforce the vendor's rights.

1. Property can be legally sold in small lots so as to enable persons to build houses thereon; but in each case a fixed price in one sum must be given. Yearly rents or other periodical payment are not admissible. The vendor may at the same time retain certain real rights.

2. In the contract or covenant, which is absolutely governed by the law of free contract, conditions may be inserted binding the purchaser to build or employ the ground purchased in a particular manner. If this restriction is properly entered in the "*Grundbuch*" as forming a real lien on the property in question, it can be enforced by legal process. No special legal or customary restrictions exist in the case of any particular class of purchasers.

3. Such restrictions, as long as they are properly entered in the "*Grundbuch*," may last for ever, and can be enforced by the action of the party expressly entitled to claim their observance. In the special case cited, *i.e.* where a purchaser has covenanted or agreed to use a house as a private dwelling-house only, and turns it into a shop, the purchaser who had expressly covenanted to use a house as a dwelling-house only would not be at liberty to use it as a shop or store, against the rights of the vendor or his legal representative. 4. The enforcement of the restriction in question could only be claimed



by the person expressly empowered by the contract to do so, and by no other. This follows from the very nature of the contract. If the property be re-registered in the "Grundbuch" as conferring this right, a course quite permissible, the owner of such property would be in the case cited the legal prosecutor. Neighbourhood *per se* confers no such right, which can only be derived from contract.

In Bavaria the land is held by about 458,416 independent landowners (with 1,047,596 labourers), ranging from the small proprietor owning a few cows, and the peasant who works on his own land with his labourers, to the owners of large estates whose possessions may almost be compared with those of English landlords. The average size of an estate (arable land or wood) in Bavaria is only 5.74 hectares; in Hanover and Pomerania, 20.93 hectares; in Silesia and Brandenburg, 16.36 hectares; whereas in England, of the total area of 13,205,406 hectares, not less than two-thirds are in the hands of 10,207 persons, each of whom owns more than 200 hectares. Thus, in Bavaria small estates are the rule, and when the electoral lists were prepared according to the law of May 26, 1818, there were only 7,182 landowners qualified for election, *i.e.* landowners possessing estates of the value of 8,000 fl. to 10,000 fl. (13,714 to 17,142 marks, or 685*l.* to 857*l.*).

Apart from some cases of entailed property, which can exist only among nobles, the ownership of land, its transference *inter vivos*, and the leasing and the letting of it, have been treated, since the year 1848, not according to feudal principles, but solely according to the principles of common law (the common law, as is well known, not recognising even in land an ownership restricted by law as to succession), and it allows to the individual owner the greatest freedom with regard to the disposal of his property.

In the year 1855 an attempt was made by the passing of the law concerning hereditary landed property to reintroduce a certain degree of restriction with regard to succession, if only as an optional measure, but the small amount of popularity gained by this experiment has been practically shown by the fact that hardly any advantage has been taken of this ability to create such hereditary estates. As "latifundia" does not exist in Bavaria, where large estates are limited in number, the system of leasing estates and letting land or building plots plays a very subordinate part; whereas in Great Britain the farmers, renters of building plots, and builders form a highly important class.

Leases for 60, 99, or 1,000 years are unknown in Bavaria. "Erbpacht" (emphyteusis) and "Platzrecht" (superficies)—hereditary and transferable rights with regard to land or houses belonging to other people—very seldom occur. Single dwelling-houses are seldom let entire, but, as a general rule, only the apartments of which they consist, or other portions or dependencies, such as stables, *ateliers*, &c. As a proof of the extent to which everything in Bavaria favours the principle of separate ownership in landed property (even in miniature), may be mentioned the so-called "Herbergen," or working-men's dwellings, in Munich and its suburbs, in which different floors of the same houses are owned by different people. The periods of leasing and letting are comparatively short; in Munich, for example, apartments can be quitted or taken twice in the year—on St. George's Day (April 24) and Michaelmas Day.

### CHURCH RESTORATION.

A LECTURE on church restoration was delivered on the 22nd inst. by Mr. C. Hodgson Fowler, F.S.A., F.R.I.B.A., before the members of the York Architectural Association. Mr. A. Pollard, president of the Association, occupied the chair, and there was a large attendance. Mr. Fowler, in commencing his address, explained what was meant by the term restoration, and asked those present to assume that they had met together as a committee to restore an old church, this being, perhaps, the best subject upon which they could base restoration. They would first make a careful inspection of the church, and prepare the drawings, &c., for the work. The latter brought the archaeological knowledge of the architect into play. He would have to deal with the general character of the edifice, and if there were any of its features destroyed, such as tracery, &c., and it was necessary to replace them, he should not evolve any substitution from his inner consciousness, but visit two or three churches in the district, where he would be almost certain to find some key to his difficulty. Having stated that local characteristics should be studied, the lecturer proceeded to consider the imaginary building in detail. He first dealt with the masonry, to which, he urged, it was a most important rule to do as little as possible compatible with keeping the building in a sound condition. Next the piers and arches would have to be considered, then the main walls, and the carving, which in its decayed state was more interesting than new work, and would give to the student of architecture or carving many good hints. Turning to what ought not to be done, the lecturer deprecated the cutting out of mouldings

which were quite perfect, and said the proper jointing of old work was a point often overlooked. He then dwelt on the dressing of stone, the tiling of floors, and the tracery (which he said should be maintained even if worse for wear), and said that those present should ever remember that they were students, and that the "sermons in stone" that our churches would preach to them were more valuable than any number of books. He next spoke of the present system of plastering, and expressed the opinion that the plaster of the existing period would not endure as long as that of old, which lasted five or six hundred years. Then he came to the woodwork, the roof, the seats, the plumbers' work, glazing, and having finished with the fabric, he turned to the monuments and fittings. With regard to the monuments, there must, he observed, be preservation rather than restoration. Many of them would present no difficulty—the application of a little soap and water being all that was necessary. Mr. Fowler afterwards impressed the great need of personal care, and said that if it were not given mistakes would occur which the architect would regret. It would be impossible for a man to give as much care as he would like to give, but he would find that every iota of care and diligence would be reflected in his work.

A vote of thanks to the lecturer, moved by the chairman, was seconded by Mr. G. W. Penty, who said those present had listened to words of authority upon the subject of restoration. Thanks to the exertions of Mr. Street, Mr. Fowler, and others, architects now had a better conception of what actually was true restoration. The vote of thanks was then passed, and Mr. Fowler, in replying, said he thought that restoration would be a favourable subject on which to speak to them, as they lived in a city with so many interesting buildings. If, therefore, he had afforded them any information, he would be recompensed for any trouble he had taken.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### A PAINTER'S DIARY.

ONE of the saddest stories in the history of British art is the career of Samuel Ford. Competent judges have said that if he lived he must have been among the greatest artists of the century, and the few paintings he has left, although little more than fragments, confirm that opinion. Ford was a native of Cork, where he was born in 1803. In those days it was difficult to attain knowledge in Ireland, but the Cork people somehow managed to preserve a genuine interest in literature and art. "I listened to two boys, almost in rags," says Thackeray; "they were lolling over the quay balustrade and talking about one of the Ptolemys, and talking well too." Ford was like one of those boys, and during his youth, in spite of misery and hunger, he acquired a knowledge of languages and literature that would do credit to a university student. There were more facilities for studying art. In a room of the Corn Exchange was a collection of casts from the antique (and we believe it is still there), which had been presented to the Prince Regent by Canova. The casts were useless to the prince, and eventually they found their way to the cockloft near the Lee. Maclise and Ford spent many a day together before them. Another advantage was derived from the shapely figures and intelligent faces of the people. "I never saw such a collection of bright-eyed, wild, clever, eager faces," continues Thackeray. "Mr. Maclise has carried away a number of them in his memory, and the lovers of his admirable pictures will find more than one Munster countenance under a helmet in company of Macbeth, or in a slashed doublet alongside of Prince Hamlet, or in the very midst of Spain in company with Senor Gil Blas. Gil Blas himself came from Cork, and not from Oviedo." Maclise, having Scotch energy, worked his way to London, where he could study and win fame. The gentler Ford, who was the finer genius of the two, remained in Cork, and for a living became master of the Mechanics' Institute. He tried to paint, but he was so poor that he was often unable to buy materials. A few of the Cork people came to his aid, but it was too late. The following portion of a diary has been preserved, and it reveals the visions which flashed before him, and the misery which awaited him when his ideal world vanished:—

June 15, 1826.—Began the design for the ceiling of the theatre. The idea of the *Vision of Tragedy* was caught from Milton:—

Sometimes let gorgeous Tragedy  
In sceptred pall come sweeping by,  
Presenting Thebes or Pelops' line,  
Or the tale of Troy divine.



The first thought was Tragedy sweeping on, while the bards are raised to view the wonders of her power, and the distance was to be the arena of some tremendous catastrophe drawn from the far times of the earth. It by degrees altered to the form in which I painted it in the cartoon.

August 9.—Thought of an exhibition of six pictures: *Prophecy of Balaam, Macbeth consulting the Witches, Œdipus, Romeo and Juliet in the Tomb, Tempest, Retreat of Charles the Fifth.*

February 1827.—I think it is better not to attempt subjects except they are called for, because I am led away from them before the mind has had time to mature any one idea connected with them. Even, in the first instance, the mind cannot take sufficient interest in them, at least only for a very short time, no properly substantial end being in view. The mind, I think, by this vagrant mode of action, will lose its strength—irritation is the common result of those trials; for they are trials made under the very greatest disadvantages. I am in doubt whether it would not be better to avoid making even the slightest sketches of subjects, choosing rather to give the mind a habit of looking abroad at the proprieties of things, and leaving it thus to gain strength which can effectually be used when the proper time comes.

November 1827.—Painted *Crucifixion* for Skibbereen, from two o'clock, November 8, to half-past two o'clock, November 10. Painted in light and shadow, glazed with sienna and lake.

November 12.—Settled once more in Cork.

January 22, 1828.—A theme occurred to me—a figure in crimson drapery rushing through a stormy sky on a white horse—blue clouds underneath—behind the horse a dash of lightning, merging into murky purple overhead.

February 4.—Bacchus in India might be made the foundation of some wildly gorgeous, romantic scenes. Now, I should wish to be able to give ideas of the imaginary spectacles that are presented dimly to my mind—scene on the shore, among the rocks, such as Bacchus might have sat on, when the pirates took him—the quiet, fresh loneliness of a smiling world rarely seen by mortal eye, a dreamy kind of half-spiritual place. How much there is that may be done—how little I can do. The circumstances of the present time will, perhaps, in some respect, exert an unfavourable influence over the future—in other respects not so—certainly all the products of God's care. I do not know that I have once in all my life said "thank God," when the plans of my own formation were obstructed.

February 10.—"And the sea gave up the dead that were in it"—the general resurrection—one of the grandest, most pathetic themes. Shall I ever be enabled to give it all the wildness and beauty that I imagine of it? Began the *Fall of the Angels*. Drew the lines.

February 12.—Distant rock and general effect in umber. Painted by night.

February 13.—Glory round the throne. By night.

February 14.—Throne. By night.

February 15.—Cherubim. First day.

February 16.—Battlements of heaven. Second day.

February 23.—Dead-coloured the second group of angels. By this time I had copied the sketch of the first group on the canvas. Mr. Penrose called yesterday to see *Tragedy*, and to-day he came to see the *Angels* with Mr. Newenham.

From this day I began to think no more of it as to the exhibition. I was ill, and occupied with other things, till Mr. Deane [known afterwards as Sir Thomas Deane, architect] on Friday, March 28, promised to supply me with thirty shillings a-week while I should be engaged in the execution of that picture. Brought it home that evening, and began a sketch of the front figures in light and shade.

February 25.—Yesterday saw Michel Angelo's *Fates* shadowed for the first time: saw a small outline of them nine or ten years ago. I remember I did not think them *Fates* at all then. Though there is not majesty and terror enough about them, and the conception is certainly not adequate to the dignity of the subject, yet there is enough of power in it to proclaim the author possessed of great requisites in his art, requisites most lamentably wanted nowadays. Compared with this work all that I have done, almost without an exception, appears weak and inefficient, vapoury and unreal—practical, perhaps, but unsubstantial and insipid. That would never do for me.

Saw the fine woman from the Lower Road. She is, indeed, a magnificent creature: her very cloak folds round her in the grand style. At the distance of the breadth of Patrick Street, when the features were all indistinct, there was yet quite legible the energy or the intensity of feeling dwelling in them and arresting the mind to the momentary study of them. How wretched the generality of heads in comparison with that of this woman!

A whim occurred to me the other day of Valentine and Orson serving as the ground of a gallant display of pictorial energy—a romantic story, certainly—part, at least, very pretty. I don't remember the whole.

Mr. Crawford called on me, Wednesday, March 26, and

brought me five pounds. On speaking to Mr. Willis the next day, he offered and gave him five pounds more for me, in order to go to London.

April 5.—Being without money, I changed Mr. Crawford's five-pound bill, and intend to replace as soon as I hear from Mr. D.

In the course of the month of March, Doctor Murphy, South Mall, offered me as far as ten pounds to go to London.

Mr. Corbett wished me to paint a picture for him for two guineas. I was, and am, much obliged to him, it showing more wish to do me a service in the right way in him than all the talking of those who let it take the place of doing, even a little.

Saturday, April 12.—On Wednesday, April 9, I got the order of the foreground of the *Fall of the Angels* completed in umber; on Thursday I began in a purple tint to shadow forth the distant armies; Friday, I nearly completed (for the time) the cavalry in the middle space; to-day I brought that part to a close, and began to lay the neutral tints on the upper figures of the foreground. I was five days occupied in rubbing in the foreground in umber—a proof of the interruptions I continually experienced from languor and incapability of lengthened exertion—and besides all that, one or two doses in the way of old jobs that discomposed me not a little. I received three pounds from Mr. Deane to-day, for the fortnight passed.

April 14, Monday.—Rubbed in the foreground of the right-hand portion in body colour, which I found too dark. I changed it by brightening the figures with the high lights, and brought it to bear, as far as I went.

April 15.—Finished a small portion of a few of the figures—a head and breast, a leg, a head turned down.

April 21.—Invited by Mr. Morgan to finish the picture at his house for the sake of my health.

April 22.—Went to breakfast at Mr. Morgan's. Charmed with the place appointed for me.

April 23, Wednesday.—Sold the picture to Mr. Penrose for thirty guineas.

April 24.—Sent the picture to Tivoli [a house near Cork], rolled up—not painting since Monday.

April 25.—Received five pounds from Mr. Penrose. Got the picture on the frame.

April 26.—Began to paint at Tivoli.

April 28, Monday.—At home—took medicine—doing nothing. The chain of events seems as it were unwinding itself, and by the mercy of Eternal Deity each unfolded link is endued with the power of shedding a greater degree of repose over me now, and of throwing a quieting influence over me while in the contemplation of the distance.

May 5, Monday.—Since last Monday I have been at Tivoli but a few days—the foul weather, languor, and medicine kept me loitering, and when I did get there, weakness prevented me from doing scarcely anything. This day I was enabled just to give an appearance of finish to the upper part—lower part untouched. Mr. W. thought it looked very well, saving the bottom ruins, but it would require more nerve than I possessed even to begin to touch on them.

May 11, Sunday.—Since last Monday I have lain in bed. The love of the Eternal was surely displayed in choosing this time for this dispensation—a time when I could lie calmly and bless Him for the fullness of the store He had laid by me.

The entry for May 11 in poor Ford's diary is suggestive of that euthanasia which seems to be a compensation to poets and artists for their past troubles. He died on July 28. The entries afford opportunity for comment. It will be observed, for example, that one of Ford's dreams was to paint the subject which Sir Frederick Leighton afterwards selected for a panel for the dome of St. Paul's. His recognition of the superiority of Michel Angelo, although he could only have seen a print of one of the works of that master, speaks well for Ford's judgment.

## BURMESE BUILDINGS.

ACCORDING to a correspondent of the *Times* the present capital of Burmah is Mandalay, a city built on a site which twenty-five or thirty years ago was mere jungle. The capital has frequently changed its site, having since 1740 been at Ava three times, at Amarapoora twice, and at Monchobo twice, but since 1857 it has been fixed at Mandalay. Mandalay is enclosed by a square brick wall, 26 feet high, crenellated at the top. Twelve gates pierce the wall, and from these macadamised roads, 100 feet broad, intersect the city. The number of houses inside the walls is supposed to be about 13,000, and the population is estimated at about 60,000. Within the city walls are the king's palace and gardens, the treasury, arsenal and powder magazine, and mint. The houses, as a rule, are mere huts, raised on piles of 5 or 8 feet high, and made of bamboo, with thatches of leaves, but there are some houses, particularly those of the Chinese, in which masonry is employed. In many respects Mandalay is superior to most Indo-Chinese cities; there is not the squalor to be seen in the



Siamese or Cambodian capital, and, thanks partly to the army of dogs and pigs, the streets are fairly free from evil smells. Bhamo, the extreme northern limit of navigation by steamers on the Irrawaddy, is a town about a mile long, situated on the left bank of the river, with a population of about 2,500. Amarapoora, a city nearly a mile square, and more than once the capital, had not many years ago about 90,000 inhabitants. The number of pagodas and monasteries in and about the principal towns of Burmah is vast beyond belief. Pagan, the ruins of which cover an area of 16 square miles, situated on the left bank of the Irrawaddy, is famous for its numerous temples, to count which is one of the proverbial impossibilities of the Burmese. This town is said to have been in remote times the residence of a long dynasty of kings. Other large towns are Yenangyoung, the centre of the petroleum trade; Magwé, and Minhla; besides which there are other considerable towns and villages along the river and in the interior.

Burmese houses are so fragile that towns quickly spring up or become deserted. When a royal whim, or the caprice of the court astrologers, dictates a change of locality for the capital, an order goes forth that the old city be abandoned, and commanding all loyal subjects to move into the new one. The houses are not so well put together that they cannot be easily taken to pieces, transported a few miles, and re-erected; but the abandonment of crops in the ground, and possibly of the business connection which traders have created in a certain locality, which may not fall in their way again, involves serious loss to people living in the capital, and, of course, retards the progress of the country very greatly. The inflammability of the material of which houses are built, and the almost suicidal carelessness of the people, combine to make conflagrations and the burning down of several blocks an episode in the life of a town-bred Burman recurring too frequently to excite comment.

### THE CHANNEL TUNNEL.

A MEETING of the South-Eastern Railway Company was held on the 22nd inst. Sir E. W. Watkin, the chairman, submitted a resolution for maintaining and continuing the experimental works for tunnelling beneath the Straits of Dover. He said he did not understand any objection to the Bill, unless on the ground of cost. There were no plans or estimates to be deposited. It was simply a Bill to keep alive the attempt to obtain an extension of the South-Eastern Railway to the Continent. Putting aside the military view, the English scare view, and looking only to the economic view, what the Channel Tunnel Company had done was this: they had proved to demonstration that the tunnel could be made, by excavating tunnels under the sea, 2,160 yards at one place and 800 yards at another. The French Tunnel Company had done the same thing on the French side, and the result had proved that the grey chalk, through which the machine easily cut its way, was of the same consistency and thickness on both sides of the Channel. The French had made 9,000 soundings, proving that there was no fault or crack, and, therefore, they had every reason to believe that the stratum was continuous. Their experiments had settled the rate of progress, and approximately the cost, the time being very small as compared with the twenty years the engineers had talked about, while the cost would be one-third of their estimate. He had not the slightest doubt the tunnel could be made for three millions, and be completed in four or five years. Viewed as a financial question, if the tunnel was made, the South-Eastern Railway would be the best property in the world. Carrying goods without breaking bulk, and conveying passengers without making them sick, could not fail to greatly benefit the South-Eastern Railway proprietors, and it was for them to say whether, in spite of all prejudice and all opposition, they should not in their own interest keep this question alive. They were partners in that important traffic with the directors and proprietors of the Northern of France, from whom the idea of the tunnel had come, and as they had a strong feeling in its favour, that was a reason why the proprietors of the South-Eastern Railway—which was really an Anglo-French line—should favour the project, even if not so perfectly convinced in their own minds of its value. It was an interesting fact that in excavating their tunnels they had come on little cracks in the grey chalk, from which small quantities of water exuded. That water was not salt, as it would have been if it had been filtered through from the sea, but perfectly fresh, and it had gradually run dry, showing that it had been imprisoned in the chalk for perhaps millions of years, and that after running out slowly and gradually it disappeared for ever. That was not only interesting geologically, but economically, in the construction of such a work as that. He reminded the shareholders that the Channel Tunnel Company had repaid to the South-Eastern Railway shareholders every penny they had subscribed on the authority of Parliament, and that the former possessed not only the experimental works, but had purchased all the foreshore from the

Martello Tower to the Shakespeare Cliff, and that as regarded the meeting, the question was narrowed down to paying the cost of that Bill, which, rather than lose, he would pay himself. The resolution was seconded by Lord Brabourne.

An amendment, stating "That in view of the present strained relations between France and this country, it is not prudent or politic to proceed with a Bill or Bills in Parliament for the construction of a Channel tunnel," was proposed and lost by a considerable majority. The resolution was then agreed to.



### Semper and Utilitarian Education.

SIR,—To "Cui Bono's" letter in *The Architect* I beg to give an answer taken from my father's own writings. Your correspondent seems to say that a book is only useful to art when it gives a man suggestions for designing. It is exactly the very point of view my father has always kept before him, both in teaching his pupils and writing his books, viz., to develop and strengthen our power of composing by analysing for us what are the different factors which go to making a work of art, or the style of a given epoch. In explaining what were the laws of composition, and from what different points of view it might be examined, my father did not wish to cramp the artist's freedom, but, on the contrary, to excite his imagination by awakening his reasoning powers, so that he might work as an independent artist untrammelled by any traditional prejudices.

The industrial arts of England owe much to my father's very successful teaching in Marlborough House, and to the part he took in the foundation of the South Kensington Museum. To the impetus they then received, English arts owe their present development, and it is unthankful from the short-sighted, practical Mr. "Cui Bono" to try to deny it. It is also well known that the great progress Germany and Austria have made in art during the latter half of this century is due to my father. Rarely has an artist had such influence on his pupils and on his time, and yet a "Cui Bono" must come and teach us that nothing worth knowing is to be got out of my father's work on "Style." Certainly everyone must learn to draw by simple application; but is the simple technique of drawing sufficient to make an artist? There is not the slightest doubt that, for a serious artist who takes a high view of his art, there is both excitement to thought and knowledge to be got out of my father's book; but of course to appreciate it we must read it—which "Cui Bono" does not seem to have done—and also understand it, for the reader must have some general education, and not be limited to the purely technical knowledge of his trade. When "Cui Bono" requires something tangible as a result of my father's teaching, let him look at my father's buildings. Was my father simply a theorist, as "Cui Bono" believes? If he wants to see whether my father was a practical man, let him read the preface to his book; he will see my father's own opinion about the importance of practical knowledge. At all events, I am happy to hear, through *The Architect*, that my father's book is going to be translated into English, for I feel confident the reading of it will sweep away all the prejudices of "Cui Bono" & Co.

HANS SEMPER,  
Professor of Art History, Innsbruck.

January 26, 1885.

SIR,—I have read with much interest the correspondence in your excellent journal arising out of the able papers read by Mr. Harvey and Professor Brown on Semper.

I am a strong advocate for a sound general education, and for an intimate acquaintance with whatever bears in a special way on one's adopted profession, or the work one has in hand. But in these days of increasing examination manuals it is a truth which cannot too often be insisted on that a man's education, or his training for any work, does not consist alone in what he acquires from books. Books are a record of thought and discoveries—a priceless heritage. But we should guard against making book-learning the "be all and the end all." Self-reliance, adaptability, resource, sympathy, quickness of perception, individuality—these are the things that make the man; these it is that make the architect. They are not cultivated so much by books as by the actual experiences of life—its wants, its ways, its moods. These are the qualities which win distinction in all walks of life. It is an everyday experience that the best divine is not necessarily the best bishop, the best student the most successful doctor, the most learned lawyer the astutest judge, the closest political economist the wisest statesman. Now it seems to me that of good works treating of



architecture there are already in England plenty to hand. To look abroad for others seems of doubtful advantage, and scarcely likely to influence for good. Architecture, like literature, customs, laws, should be a native growth, should, in a measure, show forth the national mind and temperament. Professor Brown said in his letter last week that Semper's treatment of style "is not specially original." This is exactly as one would have expected. The German professor evolved no new style of architecture out of inner consciousness. The styles of architecture are as freely at the disposal of every English architect as they were to Semper. But to these general styles he gave a local colouring—a colouring expressive of the tone of his own mind, presumably of the mind of the nation to which he belonged. Now, what I contend is, that the systems and laws of architecture should be known thoroughly to every English architect, and that he should so use these as to produce work in some manner expressive of the character of his own country.

Mr. Harvey seems offended that architecture should be fettered by any considerations of usefulness. Semper, he wrote last week, "differs essentially from those who consider architecture as the handmaid to utilitarian purposes." Surely the very *raison d'être* of architecture, of buildings of all kinds, is utility. Was there ever any building raised for artistic effect merely? Westminster Hall is now little more than a show place. "Its occupation's gone." Would such a structure be raised nowadays if it did not already exist, merely for the pleasure of beholding it, studying it, and feeling the effect of its splendid proportions? Architecture is seen at its best in churches. Here the architect is least trammelled; here he has the freest scope for his fancy, for beauty of lines and harmony of proportions. But surely Mr. Harvey will not contend that even here architecture is not the handmaid of utility. A church is a building to enclose a number of people congregated together for the purpose of religious worship. But a church ought to be more than this. By its beauty, grace, or grandeur it ought so to inspire the people within it as to raise their souls to higher thoughts, and to put them in a disposition fitting to an act of divine worship. Architects must learn to bend themselves to the fact that theirs is the one among all the arts that arises from needs, and is necessarily limited by wants. There is evidently no undecided feeling now that an almost wanton disregard for the first purposes of a building, as shown in the new Law Courts, has thrown back architecture in England for a decade.

Mr. Harvey, in virtue of his teaching, or in spite of it—for it is not clear which—shows in his detailed and very clear description of his drawing that he himself is not without this regard for everyday comfort and adaptability to circumstances. But when he talks of attempting "a poem in bricks and mortar," then surely he mistakes the scope and purpose of his art. Is he here expressing Semperism? If Lessing's "Laokoon" has escaped the notice of Mr. Harvey, it must surely have been familiar to his master. In this standard book the masterly German critic shows conclusively, with that clear insight of his own—a gift not given by books—that even a picture cannot be a poem, that poetry and the sister arts differ essentially in their symbols, their aims, and their laws.

I am afraid, Sir, I have trespassed unduly on your valuable space; but I plead in excuse a desire to see our architects men of native sentiments and aspirations, ready to make their skill helpful to the comforts of home, and able to reflect in their work the genius of our race.

Yours obediently,  
DOMUS ET PATRIA.

SIR,—In my opinion great credit is merited by Mr. Harvey for his interesting letter explaining the process of designing as carried out in his porch. Artists of every class are not disposed to take the public into their confidence and show how effects have been produced. As I said before, I must decline to criticise the porch; but I trust I shall not be transgressing if I suggest that the elements of the design are not unfamiliar to us. Similar columns, frieze, ashlar, &c., are to be found elsewhere, and I fancy that the arrangement of the door-scrapers is not altogether unique. I have no intention of implying that Mr. Harvey's skill in choosing fine types for his details detracts from the merit of his design, and merely draw attention to this fact in case any aspiring youth might imagine that a study of Semper would enable him to revolutionise architectural design. When it is said that Semper "enfranchises his followers from the tyrannical trammels of precedents," we ought to have a little stronger evidence in support of the assertion than the variation of the proportion of a column from seven and a half to eight and a quarter diameters. Mr. Harvey should know his own mind better than anybody else, but I can hardly suppose that his enfranchisement is entirely due to Semper. Does he not owe something to the Ecole des Beaux-Arts, although he has not said a word about it? To my eyes the porch is more French than German in character, and it is all the better on that account.

Professor Baldwin Brown, happily for himself, stands aloof from the troubles which beset architectural practice—or, rather, want of practice. He can afford to look down on architects who are dissatisfied when they see the good folks who have commissions bestowing them on men who profess to attach little importance to art. For my own sake I should like the English public to be as well instructed in art history as the French and Germans are, and I hope Professor Brown may do more towards that end than has been accomplished hitherto by the Slade professors in England. The outcry which the Professor imagines I have raised has not been directed against the use of Semper's or other books in University classes. If the public in general can be made to take an interest in a graceful arrangement of bricks and stone, because they see in it a testimony to "the artistic importance of seams," so much the better, although one would prefer to have the admiration based on more rational grounds. What is sorely needed at the present time is sufficient interest to allow of any expenditure for the sake of art. Professor Brown believes that the public taste is advancing. I wish sincerely I could agree with him. Within an hour after I had read his last letter I had an illustration of the extent to which architecture as a fine art is esteemed. I called on an old friend, and was not long in his office before I asked what he had been doing lately. He pointed to a couple of photographs of small stations on a branch railway. Like all my friend's work, the buildings were good in style, although simple and without a trace of anything that could be called needless ornamentation. Whoever compared them with the majority of stations would see that they were designed by an architect. But they were considered to be too good by the directors, and the plans of the remaining stations have been worked out in the engineer's office. There are educated men among the directors, yet they sacrificed the appearance of their buildings for the sake of saving a sum that was insignificant if compared with the cost of the line. Every architect could relate similar stories to Professor Brown, and, unless I am mistaken, they are heard within a very short distance of his class-room. When an architect has the spirit of the enthusiast in him and a sufficient sum for his wants at his bankers, he can afford to be philosophic under disappointments. The late William Burges was an example of this kind; indeed, his devotion to art was unsurpassed. But the majority of men are compelled to depend on their commissions for existence, and speaking generally it may be said that it is not advantageous for a man's finances when he gets the reputation of an ambition to raise "monuments which are to be among the most precious possessions of the human race" at his client's expense. Even in Government offices that ambition is fatal; and hence one looks in vain for a public building by Cockerell or Burges. We know how Street had to mar his work or lose his commission, and how Scott had to sacrifice his designs, and, as if he were a journeyman, make another on a regulation pattern. With such examples before him, is it wise for the young architect to believe that the English people have their purses always open to pay for high art in their buildings?

So much for one part of the Professor's letter. With regard to the utility of Semper's book, I hope he will pardon me for saying that my opinion has not been altered. There are other means in existence, without going to Germany, for educating a student's artistic taste, and "rendering him familiar with the great masterpieces of old time." The French manage to do without Semper; the Germans are indifferent to all but a portion of his works. Yet it is proposed, at the public expense, to bring out his book in English. Who knows but that in time the foreign engine for drawing corks, which Hogarth represents, may also be manufactured by the Government as a substitute for Sheffield corkscrews? It is not without affinity to Semper's elaborate way of producing simple things. If the Science and Art Department is desirous to bring out a book which is beyond the enterprise of Paternoster Row, let the experiment be made with Cockerell's "Academy Lectures."

Your obedient servant,  
CUI BONO.

#### Fireproof Protection of Openings in Party Walls.

SIR,—The paper read on the above subject at the Royal Institution of British Architects, and the discussion arising therefrom as reported by you (January 24), afford sufficient evidence that as a rule the provisions of the Metropolitan Building Act are inadequate to secure the protection desired. The reasons of failure are not difficult to trace. In the instances mentioned of doors made merely according to the Act, which are reported to have been successful, the success has arisen from the comparatively slight test to which they have been subjected. Whenever the full intensity of the fire has been directed against the doors by the action of air-currents, there can be little doubt that in a fire of any magnitude they have invariably failed. The immediate causes of failure are these:—1st. The intense heat causes expansion and



buckling of the door-plate. 2nd. This occasions openings between the door-plate and frame, and in the case of sliding doors between the door-plate and wall. 3rd. This, again, allows the fire to penetrate to the door fixed on the other side of the walls, which in its turn similarly succumbs, and allows the fire free passage from one compartment of the building to the other. 4th. But in the case of sliding doors, even without expansion and buckling by heat, a considerable space exists between the door and the face of the walls, at the top, bottom, and sides of the door, as mentioned by Mr. Wyatt Papworth in the course of the discussion. It follows, then, from these facts, that there can be no security in such doors (whether hinged or sliding) unless they be so firmly held in position all round their edges that no amount of expansion or buckling shall be able to draw their edges out of their rebates. This we claim to have effectually provided in our Patent of 1883.

In 1883 we were applied to by the late Mr. Thomas Chamberlain, architect, to design and supply to Messrs. Faudel & Phillips's new premises, Newgate Street, a number of large sliding iron doors, which, while complying with the terms of the Building Act, would also be really effective against a fire of the greatest magnitude, even when intensified by great wind-pressure carrying it directly against the doors. In compliance with these instructions, doors were manufactured by us for four distinct openings. The efficiency of these doors was fully proved in the disastrous fire which occurred in April 1884, on which occasion Messrs. Faudel & Phillips, and a number of architects and engineers, gave us very high testimonials. We have since the rebuilding supplied doors on the same principle, Mr. Wyatt Papworth, surveyor for the insurance company interested, having expressed his desire that these doors should be adopted.

Yours very truly,  
HOBBS, HART & CO.

76 & 77 Cheapside, E.C.

### ARCHÆOLOGY.

**Church Bells.**—The old bell belonging to Crosthwaite church, which was exhibited at the late Church Congress at Carlisle, has been restored to the church by Mr. R. Ferguson, M.P. The vicar has also purchased two superseded bells from Loweswater church, one of which is probably nearly six hundred years old. It has round its shoulder, in Lombardic capitals, one of which (S) is reversed, with a fleur-de-lis as initial stamp, and with nothing to indicate where a word begins or ends, the following inscription:—"Sanctamariaorapronobis." The Rev. Dr. Raven, of Great Yarmouth, to whom a rubbing of the inscription has been sent, says that he is "inclined to assign the early part of the fourteenth century as the date of the bell." Where or by whom it was cast has not been ascertained, for its letters, though Lombardic, and its maker's stamp are not identical with any letters or stamp hitherto recorded by campanologists. Dr. Raven says:—"I do not recognise the lettering. Everything has to be done for northern campanology, and I suspect some local foundry (probably at Carlisle) will turn up."

### CHURCH BUILDING AND RESTORATION.

**Marylebone.**—This church has been enlarged and remodelled under the direction of Mr. Thomas Harris, architect. The enlargement consists of a semicircular apse at the end of the nave and a new clergy vestry, with a strong-room attached. The whole of the upper tier of side galleries have been removed; the organ has been removed, and a chancel arch opening into the new apse has been formed, with various other works. The greatest difficulty, perhaps, which presented itself to the architect was how to bring the width of the nave into proportion with the new apse; but that difficulty has been overcome by the somewhat unusual disposition of the pierced screens built up to enclose the wings and form connecting links with the choir screen walls, thus producing a gradual lessening of the great width of the nave. The floor of the nave has been completely reseated with mahogany benches and repaved with Comblanchien and rouge royal marbles in chequers. The new screen walls are enriched with fluted Corinthian pilasters, and are pierced with openings into the wings. In the large arched openings on the left is placed the new organ—by Messrs. Gray and Davison—the front and screen of which are composed of mahogany and plain zinc pipes with a slight gilt scroll, while a somewhat similar screen occupies the largest arch on the opposite side. A Corinthian entablature is carried all round the church walls, a text being written over the choir; and the ceiling has been enriched with moulded ribs and other suitable decoration. The choir extends into the church as far as the position of the old communion rails, and is raised 12 inches above the level of the nave. It is enclosed by a screen wall panelled in rouge royal and alabaster, at one angle of which is placed the

pulpit formed by another tier of marble panelling. The floor is laid with marble mosaic, the choir stalls being of panelled and carved mahogany. The sacarium occupies the whole of the apse, and is raised two steps above the level of the choir, being separated from it by a marble balustrade. The chancel arch is supported by four marble columns, and the floor of the apse, like that of the choir, is paved with mosaic. There are two windows on either side of the reredos, which is enclosed in a repoussé frame of copper gilt, with marble backing and edges, and the walls are enriched by a marble entablature and pilasters. A plinth and sur-base of marble line the walls to a height of 5 feet from the floor, the space between the sur-base and the window-sills being filled with marble mosaics. Two very handsome brass gas standards, each bearing thirty-one lights, are placed on each side of the sacarium. The altar-table is of wood, with a mosaic frontal in a marble frame. The reredos embraces the whole of the middle bay, the front pilasters being carved in low relief, with arabesques symbolical of the Resurrection. All the mosaic work before mentioned portrays Scriptural subjects. In the dome of the sacarium is painted a "Majesty," Our Lord on a sapphire throne with a rich baldacchino occupying the centre bay, while on either side are angels and elders ranged in two ranks. The dome is continued round in other bays by an arcade of three arches in each bay. The windows of the apse are filled with painted glass, delineating five subjects connected with Christ's life on earth, and the subjects on the walls and in the windows of the nave are illustrative of the Law and the Gospel, six of the painted subjects between the nave windows being presented and painted by Mr. E. Armitage, R.A. In addition to the brass standards in the sacarium the church is lighted by a sun-light in the roof of the nave, standard lights on the choir stalls, and pendants under the galleries.

**Nottingham.**—On the 27th inst. the new church of Immanuel, Woodborough Road, was consecrated by the Bishop of Southwell. The site is elevated on a rocky platform, the adjoining road being on a steep declivity. At present the nave and aisles only have been erected, providing chairs for 600 people. The complete church is proposed to accommodate about 800. Coxbench stone with variegated courses has been used for the exterior, the interior showing a lining of red brick throughout; tiled roofs; timber of unvarnished pitch-pine. Messrs. Smith & Lunn, of Newark, have carried out the contract for the whole of the works. Mr. Fothergill Watson, of Nottingham, is the architect.

**Mistley.**—The chancel of St. Mary's church has been reopened after decoration. The roof of the chancel is divided into panels by curved ribs. The panels are richly gilded with various sacred emblems painted in a warm chocolate tint, while the ribs and cornice are coloured to match. The space beneath the windows is covered with a diapered pattern in olive green, surmounted by a broad gold band with text. The walls of the chancel above the string-course running under the windows are painted with a subdued red tint, and ornamented with conventional foliage. In the nave the space over the chancel arch is filled with angels, with instruments of music, rising towards the Lamb of God, encircled with the emblematical vesica over the crown of the arch. These are on a dull blue ground. The spandrel spaces between the arches are ornamented with twelve medallions figuring the twelve apostles, with appropriate emblem. The windows and arches, both in the nave and aisles, are enriched with ornaments, while the chocolate-coloured base which runs round the whole church gives richness and colour where most wanted. The work has been executed by Messrs. Simpson & Sons, St. Martin's Lane, from designs and under the direction of Messrs. Wadmore & Baker, architects, of London.

### NEW BUILDINGS.

**Hucknall, near Nottingham.**—The parish institute lately opened here, with a café, games-room, and reading-room, also with large lecture-room above, and smaller room adjoining on the same floor, has proved so far a great success in securing the attendance of the working-classes of the district. The building is constructed of Bulwell red bricks and Staffordshire tiled roofs, the leading feature of the exterior being the staircase turret. The lecture-room has an open-timbered roof. The works have been carried out at a cost of about 1,000*l.* by Messrs. Stainforth Brothers, of Hucknall. The architect is Mr. Fothergill Watson, of Nottingham.

**Gibraltar.**—The well-known firm of W. H. Lascelles & Co., of Bunhill Row, E.C., are about to erect a large building, comprising assembly-halls and masonic-rooms, at Gibraltar. The work will be carried out under the direction of the architect, Mr. C. H. Driver, 5 Victoria Street, Westminster.

**Wigan.**—A large drill-hall was recently opened in Powell Street, Wigan, by the Earl of Crawford and Balcarres,



Lieutenant-Colonel 4th L.R.V., who gave it as his opinion that the Wigan Volunteers now possessed one of the finest drill-halls in the country. The cost has been £3,300. Messrs. Isitt & Verity, of Bradford and Wigan, were the architects.

### GENERAL.

**Two Paintings** by Eugène Delacroix, viz., *Hamlet and the Gravedigger* and *The Tigers*, are to be added to the Louvre, together with two examples of *Décamps*.

**Mr. George Reid, R.S.A.**, has presented to the Aberdeen Art Gallery his large historical picture of *The Last Sleep of Savonarola on the Morning of His Execution*.

**A Roman Urn** has been discovered in the excavations for widening Connaught Road, Dover.

**The Fine Art Exhibition**, in Dundee, was the means of effecting the sale of pictures to the value of £3,206. Many of them were purchased by winners in the local art union.

**The Dublin Amateur and Artists' Society** will open the thirteenth annual exhibition of pictures to-day (Saturday). This year the works of members will be supplemented by a loan collection.

**M. Albert Goupil** has bequeathed a bust of Donatello to the Louvre, and some splendid examples of tapestry to the Gobelins.

**The Architectural Diploma** of the Ecole des Beaux-Arts was, after the late competition, granted to the following students:—MM. Authelain, Bergon, Besancenet, Boeswilwald, Gouvers, Guicestre, Nicolas, Pariset, Louvet, Leroy, Pied, Poucet, and Salleron. The subject of the test design was a ceramic museum, and the jury consisted of MM. Bailly, Questel, Andre, Guillaume, Lenoir, Ginain, Garnier, Guadet, Brune, Daumet, Pascal, de Baudot, Ribon, and Delacroix.

**The Kilmarnock Art Exhibition**, which was opened by the Duke of Portland on December 9, closed on Saturday evening. A sum of £2,600. has been realised by sale of pictures.

**The Eleventh Annual Exhibition of Suffolk Artists** was opened at Ipswich on Monday.

**A Winter Exhibition of Pictures** was opened at the Queen's Park Museum, Manchester, on Saturday last.

**The Parkes Museum** has received a number of interesting articles and models from the Japanese Section of the Health Exhibition.

**The Costume Ball** of the Royal Institute of Painters in Water-Colours is to be held in May. In consequence of the death of the Duke of Albany it was postponed last year.

**A Statue of Artemis** has been acquired by the museum of Vienna. It was found recently in Vienna, and is supposed to have been the work of a pupil of Praxiteles. Traces of colour are visible on the marble.

**An Exhibition of Historic Portraits** is to be opened in Paris during May of this year. The proceeds will be given to the support of a night asylum for women.

**M. G. de Neureuther**, architect, of Munich, was lately elected as Associate of the Brussels Academy of Fine Arts, in place of M. von Ferstel.

**M. E. Detaille** has been lately travelling in Russia, and will hang a few drawings from the North in the next water-colour exhibition of Paris. His friend, M. de Neuville, is also to show some fine drawings.

**The Bishop of Rochester** has during the past year consecrated eight churches in his diocese, and six churches have been reopened after extensive restoration and repair.

**The Leith Town Council** have lodged a memorial against the Edinburgh Extension and Sewerage Bill, on the ground that the standing orders have not been complied with.

**Mr. Robert Hutchison**, the Edinburgh Dean of Guild, died on the 23rd inst., in his sixty-fourth year. For many years he carried on an extensive business in Edinburgh as a builder. It was he who erected Craiglockhart Poorhouse, the Waverley Station, and on one occasion he rebuilt the Theatre Royal.

**M. Pierre-Joseph Vleriset**, the Belgian architect, died lately at Huy in his eighty-eighth year. He designed a great many of the principal country houses in the country.

**M. Amalle**, whose scene in the drama of "Théodora," representing the *Oratory of Justinian*, is nightly admired at the Porte St.-Martin Theatre, has become a partner of M. Robecchi, the decorator.

**Mr. Stirling Dyce**, son of the late Mr. Wm. Dyce, R.A., has offered to the Aberdeen Art Gallery portions of the cartoons of the frescoes painted by his father in the Houses of Parliament,

which comprised *The Baptism of St. Ethelbert* and five subjects from the Arthurean poems.

**The Municipality of Spezzia** propose to construct within three years a sufficient number of buildings to lodge a thousand families. Each building will be of three floors only, and will have a spacious internal quadrangle, which will be divided into four little gardens, each of one hundred mètres square.

**Mr. James Bell**, who was for many years the engineer-in-chief to the North British Railway Company, died on the 21st inst.

**Mr. Augustus W. Tanner**, District Surveyor of Hatcham of the firm of Romaine-Walker & Tanner, architects, has been appointed by the Metropolitan Board of Works to act as temporary substitute in the district of St. Nicholas, Deptford, and the portion of St. Paul in Kent, rendered vacant by the death of Mr. John Whichcord, F.S.A., and past President of the Royal Institute of British Architects.

**A New Loan** is expected to be offered shortly by the City of Paris for public works, which have been long projected, and which are to be undertaken in order to give occupation to the unemployed working-classes. The sum demanded will not be less than 200 millions of francs. No loan has been raised by the municipality since 1876.

**Subscriptions** amounting to upwards of 5,000. have been raised for the erection of the Gilfillan Memorial Church, in Dundee. A central site is being purchased in Ward Road, and it is expected that as soon as the ground is clear building will commence.

**Messrs. Sommerville & Co.**, of the Caledonian Saw Mills Bogston, are about to claim from the Glasgow and South-Western Railway Company between 50,000. and 60,000., owing to the company's operations in connection with the James Watt Dock interfering with their business.

**The Carron Iron Company** intend to offer rewards to their workmen who are able to suggest improvements by which the work of the company will be rendered superior in quality or more economical in cost.

**An Engineering Inspectorship** under the Local Government Board has become vacant by the death of Captain R. Hildyard, R.E. The appointment is worth 800. a year.

**The Bridge House Estates Committee** are to submit twelve subjects for equestrian figures to the Court of Common Council, from which four will be selected for the statuary on Blackfriars Bridge. A limited competition among twelve sculptors will be afterwards instituted.

**The Chairman** of the Finance Committee of the London School Board stated, at a meeting on Tuesday night, that he should at the next meeting of the Board have to ask for a sum little short of 800,000., and that the expenditure must go on increasing.

**The Aberdeen Town Council** on Monday resolved to proceed with the construction of a line of railway along the quay to the gasworks, for the conveyance of coal, at an estimated cost of 6,760.

**Captain Abney, R.E.**, has been appointed Assistant Director for Science under the Science and Art Department. He is known from his experiments and writings on photography.

**Mr. Charles Kirk**, architect, of Sleaford, has reported that the tower and spire of Sleaford church, struck by lightning last autumn, is so damaged as to be liable to fall at any time. Mr. J. L. Pearson, R.A., who was subsequently called in, has confirmed Mr. Kirk's report. The cost of taking down and rebuilding the tower and spire is estimated at 2,500.

**The Committee of the Sheffield Technical School** have recommended the purchase of the grammar school buildings, with a view of their adaptation to the purposes of the technical school.

**Mr. W. H. Brockbank**, assistant borough surveyor of Bolton, has been appointed to the borough surveyorship of Bolton, in place of Mr. Proctor, resigned. There were seventy-two candidates for the post.

**Mr. Ellice Clark, C.E.**, has been appointed county surveyor of Sussex. Mr. Ellice Clark still retains his appointment of surveyor to the Commissioners of Hove.

**Plans** have been prepared by Mr. W. L. Osborne, architect, for the extension of St. Paul's church, Ramsgate.

**Mr. John O. Scott** has been called in to examine and report on the fabric of St. Chad's church, Lichfield, which is in need of restoration.

**Mr. Ashworth**, architect, of Exeter, has reported on the state of St. Sidwell's church tower. It is proposed to take steps to remove such portion of spire and pinnacles as is in a dangerous condition, pending the consideration of more extensive improvements proposed.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JANUARY 31, 1885.

## A BANK STRONG ROOM.

THE offices of the National Bank of Scotland, Edinburgh, are being enlarged, from plans by Mr. M'Lachlan. The block measures about 87 feet in length by about 37 feet in breadth, the height from the pavement being about 40 feet. The structure, when completed, will form the envelope of what will be, it is understood, the strongest safe-room of any bank in Scotland. The principal strong-room is 50 feet long, 12 feet wide, and 10 feet high. All round this compartment, on both flats, there will be an ambulatory or walk for the night watchman. The walls of the under floor or plate safe will be 3 feet thick, formed of an outer and an inner coating of glazed fire-brick, the space between filled with 15 inches of cement concrete. The floor will be of concrete 2 feet thick, with a strong iron grid of  $1\frac{1}{4}$ -inch bars, set not further apart than 5 inches. The walls of the upper safe, which is to be used for the custody of cash, securities, &c., will be similarly constructed, excepting that there will be added to them, as well as to the floor and ceiling of the chamber, an inside lining of undrillable metal,  $1\frac{1}{4}$  inch thick. The iron lining of the main safe will weigh about 80 tons. The construction of the strong-room was entrusted to Messrs. Chubb & Sons, 128 Queen Victoria Street, London. To the north of this part of the building there will be two smaller safes, one on each flat, for books, &c., and in the middle flat, towards the back, accommodation has been provided for the burning of notes, when necessary, by the directors of the bank. The upper floor of the building will be reached by a staircase immediately behind the telling-room, and will contain offices for the accountant and the inspector of branches.

## WOOD PAVEMENT.

THE ancient parish church of St. Michael, Macclesfield, which has for some considerable time been undergoing restoration, was reopened on January 7. The old flooring has been taken out, and a foundation of concrete put in, on which a wood-block flooring has been laid by Messrs. Geary & Walker, of 7 John Dalton Street, Manchester, on their patent principle. The blocks are bedded in an adhesive and preservative compound, and "keyed" to the underlying cement-floated bed, this being the distinguishing feature of Messrs. Geary & Walker's patent. The architect for the restoration was Mr. James Stevens, F.R.I.B.A., of Manchester and Macclesfield, the builder being Mr. H. S. Aspinwall, of Macclesfield.

## A LADDER ACCIDENT.

THE case of Hotzner v. Gregory was tried at Croydon on Saturday last by Mr. Justice Manisty, which has interest for builders. Mrs. Hotzner was passing along Battersea Park Road in September last, and was knocked down by the fall of a ladder set up against a house by a working

painter in the employment of the defendant. The ladder fell on her shoulder first and knocked her down, and, falling on her leg, broke it in three places just above the ankle. She was carried home, and was two months confined to her bed, and can only now hobble with her stick. The defence set up was that the lady had clutched the ladder as she passed, and pulled it down upon her. The learned Judge, however, did not adopt this view, and observed that the lady was picked up with the top of the ladder close to her shoulders, and it was 15 feet long. He gave a verdict for the plaintiff for 60*l.* damages.

## "HARD LINES."

A NEW GAME, called "Hard Lines," has just been introduced by Messrs. George Wright & Co., of Westminster Bridge Road, the patentees of the "Combined Billiard and Dining Table." This invention, which deserves and promises to obtain a wide popularity, supplies a thoroughly interesting and scientific indoor game. The "Hard Lines" board is almost identical in size and shape with bagatelle, but has the advantage of being *purely a game of skill*, moreover, as several games can be played on the board, including an excellent pool. It is free from the monotony which is noticeable in the older game. Although fluking is impossible at "Hard Lines," the game is quite within the capacity of all, and while in a simple form it can be played even by children, it can also be so played as to tax the resources of the most experienced hand at billiards, for which game it also affords the best possible practice to those who have not the convenience of a billiard-table at home.

## VENTILATION OF PUBLIC BUILDINGS.

MESSRS. ROBERT BOYLE & SON, 64 Holborn Viaduct, and Glasgow, are at present applying, and have applied, their self-acting air-pump ventilators and system of ventilation to New Residential Chambers, Park Lane, under the direction of Mr. Alfred Waterhouse, A.R.A.; small-pox ship *Endymion*, Longreach, under the direction of the Metropolitan Asylums Board; new Shoe Factory, Starch Green, under the direction of Messrs. T. Chatfield Clark & Son; London Salvage Corps Station, Commercial Road; New Conference Hall, Stratford, E; Victoria Central Electric Light Station, S.W.; New Hospital, Llandudno; Sanitary Hospital, Bournemouth; New Bodega, Birmingham; Liberal Club, Colchester; Female Penitentiary, Stoke Newington; and to the residences of the following noblemen and gentlemen:—Duke of Westminster, Bishop of Bristol, Earl of Northbrook, Earl of Breadalbane, Earl of Kenmare, Earl of Shrewsbury, Earl of Coventry, Earl of Cawdor, Sir Thomas Brassey, Sir Philip Rose, Sir Henry Elliott, Sir Frederick Leighton, Sir William Foster, Sir William Humphry, Sir Richard Bulkeley, Sir James Ramsden, Sir John St. Aubyn, Sir Charles Trevelyan, and Sir Charles Brooke.

## STATUE OF SIR HUSSEY VIVIAN.

THE statue of Sir Hussey Vivian, M.P., modelled by Signor Raggi, will, in the course of two or three weeks, be cast in bronze at the works of Messrs. Young & Co., Pimlico. The statue represents the baronet in a standing position, and is artistically portrayed. When finished it will be erected at Swansea.

## COMPETITIONS OPEN.

CHELSEA.—Feb. 25.—Plans are invited for Additions to the Vestry Hall. Premiums of 100, 50, and 30 guineas. Mr. J. Elsdell Salway, Clerk of the Vestry, King's Road, Chelsea.

CROYDON.—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100*l.*, 30*l.*, and 25*l.* for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

LONGTON.—Feb. 20.—The Longton School Board are about to erect two sets of schools at Normacott and Florence, each to accommodate 700 scholars (220 boys, 220 girls, and 260 infants), and invite architects in the Potteries and Newcastle to send in designs and estimates. Mr. Geo. C. Kent, Clerk to the School Board, Longton.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.

## CONTRACTS OPEN.

ABERYSTWYTH.—Jan. 31.—For Building House at Brongog. Mr. J. Middleton, Architect, Cheltenham.

ARBROATH.—Feb. 2.—For Reconstruction of Entrance to Wet Dock. Mr. W. D. Cay, C.E., 107A Princes Street, Edinburgh.

AYR.—Feb. 10.—For Supplying and Fixing Gasholder. Mr. W. Smith, Manager, Gasworks, Ayr.

BANGOR.—Feb. 4.—For Building Villa. Mr. Owen Williams, Architect, Bangor.

BEDFORD.—Feb. 24.—For Plans and Specifications and Execution of Works in connection with Sewage Pumping at Outfall Works. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.

BEDWELTY.—Feb. 3.—For Building Cemetery Chapel, Caretaker's House, Boundary Walls, &c. Mr. G. A. Lundie, 14 The Parade, Tredegarville, Cardiff.

BEESTON.—Feb. 5.—For Building Mortuary Chapel, Boundary Walls, Entrance Gates, &c., Wollaton Road. Mr. Herbert Walker, Architect, Newcastle Chambers, Angel Row, Nottingham.



**BERMONDSEY.**—Feb. 6.—For Fitting-up, &c., of Machinery and Engineers' Work in Alterations and Additions to Baths and Washhouses, Spa Road. Messrs. George Elkington & Son, Architects, 95 Cannon Street, E.C.

**BETHNAL GREEN.**—Feb. 5.—For Construction of Brick Sewers in Queen's Road, Great Cambridge Street, &c., to Bethnal Green Road. The Engineer, Metropolitan Board of Works, Spring Gardens, S.W.

**BIRKENHEAD.**—Feb. 5.—For Supplying and Fixing Two Pumping-engines, with Pumps and Steam Boiler at Spring Hill Water Works, Ball's Road. Mr. W. A. Richardson, Water Engineer, 50 Hamilton Square, Birkenhead.

**BISHOP'S STORTFORD.**—Feb. 3.—For Construction of Concrete Gasholder Tank. Mr. H. E. Jones, C.E., Gasworks, Harford Street, Stepney.

**BLACKBURN.**—Feb. 9.—For Construction of Station. The Engineer, Hunt's Bank, Manchester.

**BLACKROCK.**—Jan. 31.—For Construction of Disinfecting Hot-air Chamber. Mr. T. M. Porter, Secretary to the Commissioners, Town Hall, Blackrock, Dublin.

**BOLTON.**—Feb. 9.—For Building Goods Warehouse. The Engineer, Hunt's Bank, Manchester.

**BRADFORD.**—Feb. 9.—For Building Sunday Schools at St. Mark's Church, Manningham. Messrs. Morley & Woodhouse, Architects, 15 Darley Street, Bradford.

**BURSLER.**—Jan. 31.—For Building the Haywood Hospital. Mr. George B. Ford, Architect, Burslem.

**BUSLINGTHORPE.**—Jan. 31.—For Restoration of Drying-sheds at Hill Top Leather Works. Messrs. Wilson & Bailey, Architects, 35 Park Square, Leeds.

**CANTERBURY.**—Feb. 11.—For Building Engine and Boiler-houses, Chimney Shaft, and other Works, Barton Mills. Mr. John G. Hall, Architect, 4 St. Margaret's Street, Canterbury.

**CARDIFF.**—Feb. 9.—For Building Workshops, Offices, &c., and for Construction of Gridiron

and Berth for Offshore Floating Dock and Sea Wall. Mr. H. W. Butler, C.E., 35 West Bute Street, Cardiff.

**CARLISLE.**—Feb. 2.—For Building Hotel, Lowther Street. Mr. James Leslie, Architect, 27A English Street, Carlisle.

**CHARLTON.**—Feb. 4.—For Construction of Urinal. Mr. G. Whale, Clerk to the Plumstead District Board of Works, Old Charlton, S.E.

**CHELSEA.**—Feb. 3.—For Pulling Down large Hall in rear of Vestry Offices. Mr. J. Risdell Salway, Vestry Clerk, King's Road, Chelsea.

**CHESHIRE LINES.**—Feb. 3.—For Supply of 1,500 tons Bessemer Steel Rails. Mr. W. G. Scott, C.E., Central Station, Liverpool.

**CREWE.**—Feb. 6.—For Supplying and Laying Cast-iron Water Mains with Valves, Hydrants, Fittings, &c., in connection with the Water Supply. Mr. J. Aldersey Davenport, Surveyor, 152 Hospital Street, Nantwich.

**CROYDON.**—Feb. 9.—For Making Roads and Paths, Asphalted Yards, &c., at New Infirmary. Plan and Specification, by Messrs. Berney and Monday, Architects, at the Infirmary, Mayday Road, Croydon.

**DAGENHAM.**—Feb. 4.—For Building School and Teacher's Residence at Hainault. Mr. John Hudson, Architect, 80 Leman Street, Whitechapel.

**DANISH STATE RAILWAYS.**—Feb. 4.—For Supply and Delivery of 70 tons of Tires for Locomotive and Wagon Wheels. Otto Busse, Chief Mechanical Engineer, Aarhus, in Denmark.

**DARLINGTON.**—Feb. 18.—For the Works in Building Central Passenger Station, including Platforms, Roofing, &c. Mr. William Bell, Architect to the North-Eastern Railway Company, York.

**DEWSBURY.**—Feb. 6.—For Building Butcher's Shop, Reading Rooms, and House, for the Dewsbury Pioneer Industrial Society. Mr. Henry Holtom, Architect, Bond Street, Dewsbury.

**DUNDALK.**—Feb. 14.—For Supplying the Clogher Valley Tramway Company (Limited) with 3,000 tons of 45-lb. Steel Rails (ordinary

flat-foot railway form), with Fishes and Washers, and 90,000 Baltic Sleepers, 6 feet by 8 inches, creosoted. Messrs. Barton, Company's Engineers, Exchange Buildings, Dundalk.

**EBBW VALE.**—For Building Master's House for the Bedwelty School Board at Briery Hill. Mr. C. Dauncy, Clerk to the School Board, Tredegar.

**EDGCUMB.**—Feb. 6.—For Building Wesleyan Chapel, School-rooms, and Vestry. Mr. Silvanus Trevel, Architect, Truro.

**EDINBURGH.**—Feb. 6.—For Building Church Manse at Ladybank. Mr. James Campbell Walker, Architect, 2 N.-E. Circus Place, Edinburgh.

**ELGIN.**—Feb. 7.—For Additions to various Farm Buildings. Messrs. M'Bey & Gordon, Surveyors, Elgin.

**ELTON.**—Feb. 3.—For Ironwork for Fire-proofing Mill. Mr. J. H. Wood, Architect, Castle Chambers, Bury.

**EYEMOUTH.**—Jan. 31.—For Cutting Track, Laying Pipes, &c., for Addition to Water Supply. Mr. J. Donaldson, Clerk to the Police Commissioners, Eyemouth.

**FARNWORTH.**—Feb. 19.—For Construction of Bridge. Mr. W. Radford, 1 Princess Street, Manchester.

**FERRYHILL.**—Feb. 7.—For Building Superintendent's House, Porch, Boundary Walls, &c., and for Draining and Laying out Cemetery. Mr. Robert W. Thompson, Architect, Bishop Auckland.

**FORGNEY.**—Feb. 10.—For Alterations to School-house for Conversion into Glebe House. Mr. C. A. Owen, Architect, Molesworth Street, Dublin.

**GENERAL POST OFFICE.**—Feb. 12.—For Laying and Working Telegraph Cable to the West Coast of Africa from St. Vincent, Cape Verde Islands. The Secretary, General Post Office, E.C.

**GLOSSOP.**—For Additions to Turn Lee Paper Works. Messrs. Maxwell & Tuke, Architects, 29 Princess Street, Manchester.

# R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,

INVENTOR and PATENTEE of the

## SAFETY WINDOW WITH REVERSIBLE SASHES

FOR

### INEXPENSIVE & PERPETUAL CLEANLINESS

Which has gained at the INTERNATIONAL HEALTH and  
SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
and 16 Diplomas of Merit.

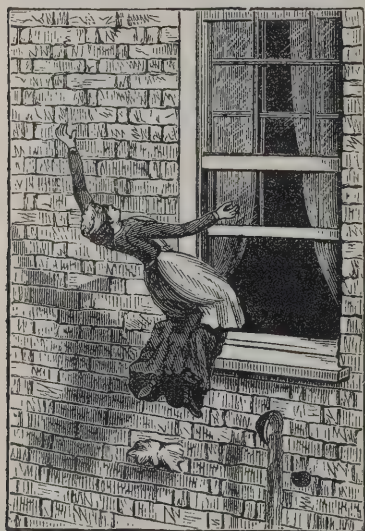
The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—

|  |  |
|--|--|
| Barnstaple . . . . .   | Hancock, Pilton Street.                    |
| Belfast and 10 miles round . . . . .   | W. J. Watson, Royal Avenue, Belfast.       |
| Bournemouth and 10 miles round . . . . .   | H. W. Jenkins & Son, Builders.             |
| Brighton and 8 miles round . . . . .   | Cheesman & Co., Kensington Street.         |
| Bristol and 20 miles round, and<br>Gloucestershire, Somerset, Dorset,<br>Wiltshire, Mon., Glamorganshire | Brook & Bruce, Albert Road, St. Phillip's. |
| Dublin and 20 miles round . . . . .  | J. & W. Beckett, 28 South King Street.     |
| Dundee and 30 miles round . . . . .  | Stewart Robertson, 34 Bank Street.         |
| Edinburgh . . . . .  | W. R. Commings, 45 Longbrook Street.       |
| Exeter and 20 miles round . . . . .  | Baird, Thompson & Co., 24 Bath Street.     |
| Glasgow and 30 miles round . . . . .   | The Sanitary and Economic Association.     |
| Gloucester and Cheltenham . . . . .  |  |

|  |   |
|--|---|
| Hastings . . . . .                         | Taylor Bros., Builders.   |
| Hereford and 5 miles round . . . . .       | O. Lawrence, 41 Portland Street.                                |
| Hilfracombe . . . . .                      | W. Jones, 4 Osborne Road.                                       |
| Leeds and 5 miles round . . . . .          | John Wm. Lewes, 65 Albion Street.                               |
| Liverpool . . . . .                        | Evan Griffiths & George Finning, Sefton Works,<br>Miles Street. |
| Ludlow and Leominster . . . . .            | J. Grosvenor, Ludlow.   |
| Newton Abbott and 10 miles round . . . . . | Parker Bros., Courtney Street.                                  |
| Nottingham and 15 miles round . . . . .    | Henry Vickers, Welford Road.                                    |
| Reading and 5 miles round . . . . .        |   |
| Southampton and 7 miles round . . . . .    | Driver & Co., St. Mary Saw Mills, Southampton                   |
| Sunderland and 10 miles round . . . . .    |   |
| Torquay and 5 miles round . . . . .        | C. & W. Watson, Union Street.                                   |





**GREENOCK.**—Jan. 31.—For Supply of 5,300 Sleepers. Mr. Thomas D. Weir, C.E., 97 West Regent Street, Glasgow.

**HEADINGLEY.**—Feb. 3.—For Building House. Mr. D. Dodgson, Architect, 16 Park Lane, Leeds.

**HEMPSTED.**—Feb. 19.—For Works connected with St. Swithin's Church. Messrs. Waller, Son & Wood, Architects, 17 College Green, Gloucester.

**HYTHE.**—Feb. 2.—For Building Cloak-rooms, and sundry Repairs to Board School. Mr. D. Davy, Architect, Cadland, Southampton.

**IRVINE.**—Feb. 12.—For Construction of Timber Wharf at Harbour Quay. Messrs. Leslie & Reid, 72A George Street, Edinburgh.

**KING'S LYNN.**—Feb. 7.—For Construction of a Three-span Wrought-iron Lattice Girder Highway Bridge over the River Nar. Mr. E. G. Mawbey, Borough Engineer, King's Lynn.

**KINSALE HARBOUR.**—Feb. 17.—For Construction of a Pier at the Town Rock; Quay and Embankment from Cramer Street to Pier (1,740 feet); Embanked Approach Road from Main Street; and Construction of Boat Slips, Flights of Steps, Culverts, Fences, &c. The Superintendent, Harbour Works, Kinsale. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**KIRKCALDY.**—Feb. 10.—For Supplying 1,780 tons of Dry Sand Cast-iron Pipes from 12 inches to 8 inches diameter. Mr. John Sang, C.E., Kirkcaldy, or Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

**LERWICK.**—Feb. 21.—For Building United Presbyterian Church. Mr. Alexander Mitchell, Union Bank, Lerwick.

**LICHFIELD.**—Feb. 12.—For Extension of the Union Workhouse. Mr. W. H. Crompton, Architect, Horton Lodge, Lichfield.

**LIMERICK JUNCTION.**—Feb. 4.—For Building Eight Cottages. Mr. Francis B. Ormsby, King's Bridge, Dublin.

**LINTHORPE.**—For Building House. Mr. W. H. Blessley, Architect, Exchange Place, Middlesbrough.

**LIVERPOOL.**—Feb. 5.—For Supplying a Six Horse-power Multitubular Boiler for Workshops, Hortham Street. The Water Engineer, Liverpool.

**LONDON.**—Feb. 3.—For Construction and Supply of Boilers for the Steamer *Albert Victor*, for the Metropolitan Asylums Board. Mr. J. Wallace Peggs, C.E., 21 Queen Anne's Gate, Westminster.

**LONGFORD.**—Feb. 10.—For Erection of Farm Buildings, &c. Mr. C. A. Owen, Architect, 16 Molesworth Street, Dublin.

**LONGTON.**—Feb. 17.—For Constructing Telescopic Gasholder. Mr. J. M. Darwin, Engineer, Gasworks, Longton.

**LUDLLOW.**—Jan. 31.—For Building Master's House and additional Schoolroom to Gravel Hill School. Plans by the Architect, Mr. J. Farmer, at the Rectory, Ludlow.

**MARPLE.**—For Building Two Semi-detached Villas. Messrs. John Eaton & Sons, Architects, Ashton-under-Lyne.

**MARYPORT.**—For Construction of Foundations and Timber Stage (Brick and Carpenter Work), to cover area of 15,000 feet, at Warehouse, Senhouse Dock, for Messrs. Carr & Co. Mr. T. Taylor Scott, Architect, Clydesdale Bank Buildings, Carlisle.

**MENSTONE.**—For Erection of Buildings. Mr. H. May, Architect, 1 East Parade, Leeds.

**MIDGLEY.**—Feb. 4.—For Building Shed (59 yards by 34 yards), with Store-room, Subway, and Appurtenances, at Oats Royd. Mr. T. Lister Patchett, Architect, George Street Chambers, Halifax.

**MIDLAND RAILWAY.**—Feb. 6.—For Alterations and Repairs to Nos. 36 and 37 Whitecross Street, London, and for Reconstruction (Iron-work) of Bridges at Croxall and Brooksby Stations. Mr. A. A. Langley, Engineer, Midland Railway, Derby.

**MILTON.**—Feb. 10.—For Repewing and Renovating Interior Walls of Parish Church. Rev. T. B. Robinson, Milton Rectory, Lymington.

**MISTERTON.**—For Heating Parish Church. Rev. G. Swift, Vicarage, Misterton, Gainsborough.

**MOSSLEY BOTTOMS.**—Feb. 2.—For Construction of Road. Messrs. Hill & Cordingley, Surveyors, 90 Old Street, Ashton-under-Lyne.

**NETHER BUCKIE.**—Feb. 6.—For Building Terrace of Workmen's Houses. Messrs. Bruce & Sutherland, Architects, Banff and Buckie.

**NEWARK.**—Feb. 12.—For Building Christ Church Parochial Rooms. Mr. Geo. Sheppard, Architect, 9 Kirkgate, Newark.

**NEWHAVEN.**—Feb. 5.—For Constructing Rain-water Tank, with a Two-throw Pump attached. Mr. George Chapman, Surveyor, Newhaven.

**NORDEN.**—Feb. 5.—For Building Five Cottages. Mr. James Howarth, Martin's Terrace, Norden.

**NORTHAMPTON.**—Feb. 12.—For Building Wesleyan Hall and School-rooms. Mr. H. H. Dyer, Architect, 42 St. Michael's Road, Northampton.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Construction of Works in connection with Widening Main Line from Manors Station to Heaton Junction (1 mile 40 chains). Plans and Specification to be seen by Feb. 2 next, at the Engineer-in-Chief's Office, Newcastle-on-Tyne.

**NORHAM, BERWICK.**—Feb. 4.—For Building Police Station. Mr. John Cresswell, County Architect, Moot Hall, Newcastle-on-Tyne.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Building Passenger Station. Mr. Wm. Bell, Company's Architect, York.

**OLDHAM.**—Feb. 2.—For Building Independent Methodist Sunday Schools. Mr. Alexander Banks, Architect, 46 Union Street, Oldham.

**PENYCLAWDD.**—Feb. 12. For Restoring St. Martin's Church. Rev. J. P. David, Penyclawdd Rectory, near Monmouth.

**PORTO RICO.**—March 22.—For Supply of Dredging Apparatus. The Spanish Consulate-General, 21 Billiter Street, E.C.

**SAFFRON WALDEN.**—Feb. 5.—For Works in Connection with Pumping Water to Reservoir

# RENDLE'S "ACME" GLAZING

(REGD)

Patentees:—**W. E. RENDLE & CO.,**  
3 WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON.

## SALES BY AUCTION.

**FOY, MORGAN & CO.** beg to announce that their NEXT PUBLIC AUCTION will take place on

WEDNESDAY, FEBRUARY 4, 1885,

at the BALTIC SALE-ROOM, Threadneedle Street, E.C., when they will offer their usual assortment of DEALS, BATTENS, BOARDS, TIMBER, &c.

Catalogues will be issued in due time.

**FOY, MORGAN & CO.** {Wood Brokers, 108 Bishopsgate Street Within, E.C.

### VAUXHALL.

On the Albert Embankment, in close proximity to the river. A Freehold Building Site of about 12,500 square feet, with extensive frontages to the road and pathway of the Embankment, close to Messrs. Doulton's Potteries and other large factories, eminently suitable for the erection of a warehouse, Public Hall, or business premises requiring space and a prominent and commanding position unequalled in the district.

**MESSRS. FAREBROTHER, ELLIS, CLARK & Co.** are instructed to offer for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Thursday, February 12, 1885, at 2 o'clock, the above valuable FREEHOLD BUILDING SITE.

For particulars apply to H. E. Brown, Esq., Solicitor, 22 Great George Street, Westminster, S.W.; or to Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, and 18 Old Broad Street, E.C.

### Auction Sales for 1885.

**MESSRS. GLASIER & SONS** beg to announce the following dates upon which they will hold SALES by AUCTION of LANDED ESTATES, Residences, Business Premises, Reversionary Interests, and Freehold and Leasehold Property generally, at the Mart, Tokenhouse Yard:—

Thursday, February 19  
Thursday, March 26  
Thursday, April 16  
Thursday, May 14  
Thursday, June 11  
Thursday, July 2

Thursday, July 23  
Thursday, August 6  
Thursday, October 22  
Thursday, November 26  
Thursday, December 10

They will be glad to receive early intimation of property intended to be included in any of the above sales. Additional sale days can be arranged to meet the convenience of clients.—41, Charing Cross.

### Peremptory Sale, at Nominal Upset Prices.

By Order of the Trustee of the late Mr. F. R. Stephens.

Enfield Highway.—A Detached Residence and 16 Plots of

**MESSRS. REYNOLDS & EASON** will SELL by AUCTION, at the Mart, Tokenhouse Yard, on Tuesday, February 24, 1885, at One for Two o'clock, 16 Plots of FREEHOLD LAND, in a good position for the erection of Shops, and a detached Private House, the first portion of the Prospect House Estate, fronting the high road from London to Hertford, between the Bell Inn and the bridge near the Ordnance Factory Station.

Lot 1. Having a frontage of 27 feet, depth 145 feet..... £25

2. " " " 26 " " 130 " " " " " 50

3. " " " 20 " " 130 " " " " " 50

4 to 7. " " " 20 " " 130 " " " " " 60

8. " " " 20 " " 130 " " " " " 70

9. A detached Private House, on plot of land 40 feet by depth of 184 feet, known as Prospect House, Enfield Highway, let at £40 per annum..... 550

10 to 12. Having a frontage of 20 feet, depth 186 feet..... 60

13. " " " 20 " " 186 " " " " " 70

14. " " " 20 " " 183 " " " " " 70

15. " " " 20 " " 177 " " " " " 68

May be viewed. Particulars, with plans, of Messrs. Warburton & De Paula, Solicitors, 3 West Street, Finsbury Circus; at the Mart; and of the Auctioneers, 43 Bishopsgate Street Without.

### BEXHILL-ON-SEA.

Between St. Leonards and Eastbourne, with Railway Station on the Estate.

**MESSRS. E. & H. LUMLEY** beg to announce that the extensive improvement works which have been carried on at a cost of about £50,000 are now complete, and invite the attention of builders, contractors, and capitalists to the valuable sea frontage now ripe for buildings. Leases will be granted on easy terms, and every facility afforded for developing this very promising seaside town.

Plans and particulars may be obtained of Lumleys, agents to the freeholder, the Right Hon. Earl DE LA WARR, at 21 St. James's Street, Piccadilly, S.W.

### To Architects, Builders, and Others.

**MR. JAMES POUSTY** will SELL by AUCTION at the Marble Store, 9 Castle Street, Holborn, on Wednesday, February 4, at One, an extensive stock of Marble Chimney-pieces; also a quantity of Marble Fenders, Tile Hearths, Stoves, &c. On view. Catalogues of the Auctioneer, 9 Castle Street, Holborn.

### Sales for the Year 1885.

**MESSRS. BAKER & SONS** beg to announce that their SALES of LANDED ESTATES, Investments, Town, Suburban, and Country Houses, Business Premises, Building Land, Ground-rents, Reversions, and other Properties will be held at the Mart, Tokenhouse Yard, E.C., as follows:—

Friday, February 6  
Friday, February 27  
Friday, March 6  
Friday, March 20  
Friday, March 27  
Friday, April 10  
Friday, April 17  
Friday, April 24  
Friday, May 1  
Friday, May 15  
Friday, May 22  
Friday, May 29  
Friday, June 12  
Friday, June 19  
Friday, June 26  
Friday, July 3

Friday, July 10  
Friday, July 17  
Friday, July 24  
Friday, August 14  
Friday, August 28  
Friday, September 11  
Friday, September 25  
Friday, October 2  
Friday, October 9  
Friday, October 30  
Friday, November 13  
Friday, November 20  
Friday, November 27  
Friday, December 4  
Friday, December 11

Auctions can be held on other days besides those above specified.—No. 11 Queen Victoria Street, E.C.

[For remainder of Auctions, see page x.]

## NORTHERN ASSURANCE COMPANY.

Established 1836.

FIRE and LIFE. At HOME and ABROAD.

London: 1 Moorgate Street, E.C. Aberdeen: 11 g Street.

INCOME AND FUNDS (1883).

|                         |           |
|-------------------------|-----------|
| Fire Premiums .....     | £520,000  |
| Life Premiums .....     | 184,000   |
| Interest .....          | 124,000   |
| Accumulated Funds ..... | 2,890,000 |

## VOLUME XXXII. OF THE ARCHITECT.

Handsomely Bound in Cloth, Gilt Lettered, price 12s. 6d.

Office: 175 Strand, London, W.C.



(Plans and Tenders). Mr. John Wilson, Borough Surveyor, Saffron Walden.

**SOUTHEAD.**—Feb. 3.—For Construction of Concrete Dwarf Wall and Wrought-iron Fence and Gate, with Brick Piers, Western Esplanade. Mr. Arthur Cayton, Surveyor, Alexander Street, Southend.

**STATE RAILWAYS COMPANY.**—Feb. 3.—For Supplying Ten Locomotive Engines with Tenders. Mr. G. H. Batten, Secretary, 7 Great Winchester Street, E.C.

**STONE.**—June 17.—For Improvement Works, Victor Street West. Mr. H. Fishwick, Clerk to the Local Board, Stone.

**SUNDERLAND.**—March 21.—For an Underground Hauling Engine. Mr. C. R. Barrett, Seaham Colliery, Sunderland. And for Winding Engine. Mr. F. S. Panton, Silksworth Colliery, Sunderland.

**SWINTON.**—Feb. 5.—For Erection of Ventilating Turret and other Works at Industrial Schools. Messrs. Mills and Murgatroyd, architects, 23 Strutt Street, Manchester.

**TIGHNABRUACH.**—Feb. 7.—For Concrete Wall, Embankment, &c., for Reservoir. Mr. J. R. Thomson, C.E., Rothesay.

**TIVERTON.**—Feb. 1.—For Repairing Upper Part of the Tower of St. Peter's Church. Messrs. Hayward & Sons, Architects, Exeter.

**TRIM.**—Feb. 7.—For Supplying and Fixing Iron Footbridge from Nurses' Residence to Hospital of Union Workhouse. Mr. John P. Davis, C.E., Trim.

**TRINITY HOUSE.**—Feb. 5.—For Supplying Iron-floor Girders, Floor-plates, and other Metalwork, and Second-order Lantern. Mr. J. Inglis, Secretary, Trinity House, E.

**TRURO.**—Jan. 31.—For Additions to Stores, Malpas Road. Mr. James Hicks, Architect, Redruth.

**TURRIFF.**—Feb. 6.—For Building Dwelling-house, &c., Byth. Mr. James Duncan, Architect, Turriff.

**WALSALL.**—Feb. 14.—For Construction of Street and Outfall Sewers, together with three Cast-iron Pipe. Syphons under Canals, with

Man-holes, Lamp-holes, Ventilators, &c. Mr. Arden Hardwicke, Borough Surveyor, Walsall.

**WEDNESBURY.**—Feb. 5.—For Manufacture and Erection in Wednesbury of Gas Engines and Air Compressors in duplicate Lime and Alumina Mixers, Johnstone's Sludge Presses, Shone's Patent Pneumatic Ejectors, &c., with all Fittings. Mr. Edward Pritchard, C.E., 2 Storey's Gate, Westminster, S.W., and 37 Waterloo Street, Birmingham.

**WEST CORNWALL RAILWAY.**—Feb. 24.—For Erection of Masonry of Penwithers Viaduct, near Truro. Plans at the Engineer's Office, Paddington and Plymouth.

**WESTMINSTER.**—Feb. 6.—For Building Male Lunatic Wards at the Workhouse, Poland Street. Messrs. H. Saxon Snell & Sons, Architects, 22 Southampton Buildings, Chancery Lane.

**WESTMINSTER.**—Feb. 9.—For Supplying and Fixing Boiler at Baths and Wash-houses, 34 Great Smith Street. Mr. Warrington Rogers, Clerk to the Commissioners, 9 Victoria Chambers, Victoria Street, Westminster.

**WHITECHAPEL.**—Feb. 9.—For Works of Building at Goulston Square Baths, and for Construction of Two Swimming Baths. Mr. John Hudson, Architect, 8 Leman Street, Whitechapel.

## TENDERS.

### BENWELL.

For Laying Earthenware Pipe Sewer (740 yards), Benwell. Mr. T. DAWSON, Engineer, Local Board Office, Benwell.  
Murphy, Byker . . . . .£340 6 4  
Langton & Sedgewick, Dipton  
Lintz Green . . . . .281 2 6  
Maughan, Jarrow . . . . .265 13 0  
Stokoe, Newbottle Fence Houses. . . . .246 5 5  
IMPSON, Newcastle (accepted) . . . . .226 0 0  
Carr, Hexham . . . . .202 19 0  
Kegan & Kenman, Newcastle . . . . .197 0 11  
Engineer's estimate . . . . .241 12 0

### BRADFORD.

For Building Residence, Barkerend, Bradford. Mr. JAS. LEDINGHAM, Architect.

#### Accepted Tenders.

Peel, mason.  
Toothill & Balmforth, carpenter.  
Hodgson & Son, plumber.  
Smithies, slater.  
Thorpe, plasterer.  
Arundel, painter.  
All of Bradford.

### CARLISLE.

For Building the Border Counties' New Home for Incurables, Carlisle. Mr. GEO. DALE OLIVER, Architect, Carlisle and Workington. Quantities supplied.

#### Whole Trades.

Court, Carlisle . . . . .£2,739 0 0  
Black, Carlisle . . . . .2,619 0 0  
Reed, Carlisle . . . . .2,519 0 0

#### Carpenter and Joiner.

Scott, Carlisle . . . . .855 0 0  
Black, Carlisle . . . . .848 0 0  
W. & H. Davidson, Carlisle . . . . .825 9 0  
Court, Carlisle . . . . .819 6 0  
Reed, Carlisle . . . . .789 0 0  
H. & R. Court, Carlisle . . . . .785 7 0  
Hewitt, Carlisle . . . . .770 0 0  
Batey & Forster, Carlisle . . . . .748 0 0

#### Slater.

Thornton, Shipley, Yorks . . . . .180 0 0  
Pickles Bros., Leeds . . . . .162 16 0  
Smith & Son, Carlisle . . . . .153 13 6  
Newton, Carlisle . . . . .150 0 0  
Baillie, Carlisle . . . . .141 8 8  
Nanson, Carlisle . . . . .140 0 0

#### Plumber.

Stockdale, Carlisle . . . . .189 0 0  
Graham, Carlisle . . . . .185 0 0  
Thompson & Sons, Carlisle . . . . .182 18 4  
Bell & Co., Carlisle . . . . .170 0 0  
Anderson, Carlisle . . . . .169 0 0

#### Plasterer.

Lister, Ilksley, Yorks . . . . .202 3 0  
Ormerod, Carlisle . . . . .200 0 0  
Ferguson, Carlisle . . . . .185 0 0  
Harrington, Carlisle . . . . .182 0 0

## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

#### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it. Yours, &c. JAMES WEIR, F.R.I.B.A.

"To Mr. Grundy." "Baptist Chapel, Clapham; J. AMMON, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public."

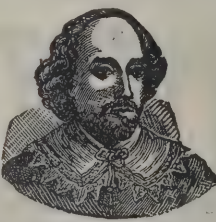
"Mr. John Grundy." From Hon. and Rev. G. G. C. Talbot, M.A., Withington Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen."

"Mr. John Grundy." From F. J. Yates, Esq., Architect, Birmingham. "The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

to JOHN GRUNDY, 30 Duncan Terrace, City Road, London.

Works—TYLDESLEY, near MANCHESTER.



## QUANTITIES, ETC.

Correctly Written and Lithographed by return of post certain.

## J. L. ALLDAY.

Shakespeare Steam Printing Works,  
COLMORE ROW,  
BIRMINGHAM.

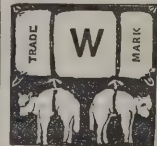
## IRON ROOFING.

HAY SHEDS, BUILDINGS, CHURCHES, SCHOOLS, MISSION ROOMS.  
GALVANISED IRON SHEETS.

Felt Tanks, Fencing, Eaves, Gutters, Down Spouts, Nails, &c.

E. F. BLAKELEY & CO.,  
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PAPERS.

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Fourteen Medals, including Gold Medal, International Health Exhibition, 1884.

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THE HOUSEHOLD DISINFECTANT.

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Silver Prize Medal, National Health Society, 1883.  
Award, International Medical and Sanitary Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH BODIES.

The Sanitas Co., Limited, Bethnal Green, E.

## J. L. BACON & CO.,

MANUFACTURERS OF IMPROVED

## STEAM AND HOT-WATER APPARATUS,

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Manufactories, Greenhouses, &c.

OFFICES AND SHOW-ROOMS:—

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TO

ARCHITECTS, BUILDERS,  
AND  
CONTRACTORS.

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The modern and important discovery in the process of making Steel has so reduced the price, that Steel Cut Nails of the well-known "Mitre Brand" can now be supplied at only 1s. 6d. per cwt. more than the price of the ordinary Common Iron Cut Nails.

The Steel Cut Nails are far superior in quality and more uniform in size than any wrought or hand-made Nails yet produced, and being lighter in weight than ordinary Iron Cut Nails and free from rust, they are found cheaper in actual use than common Iron Cut Nails at 1s. 6d. p. cwt. less.

These Steel Cut Nails are specially suited for Builders, Joiners, Coopers, Packing-Case Makers, &c., and a single trial is sufficient to convince any one of their superior quality and cheapness.

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Ask your Factor or Ironmonger for  
"MITRE NAILS."

WHOLESALE AND EXPORT ONLY.

FIRST-CLASS CERTIFICATE AND SILVER MEDAL  
AT CALCUTTA EXHIBITION.

HENRY KING,  
(Late GREEN & KING.)

House Painter, Upholsterer, and General Contractor,

4 Lower Seymour St., Portman Sq., W.

(Late of 100 NEW BOND STREET).

DESIGNS PREPARED AND ESTIMATES GIVEN.



**CARLISLE—continued.***Mason and Bricklayer.*

|                             |       |    |   |
|-----------------------------|-------|----|---|
| J. & W. Laing, Carlisle     | 1,226 | 0  | 0 |
| Hill, Carlisle              | 1,215 | 0  | 0 |
| C. & J. Armstrong, Carlisle | 1,214 | 12 | 4 |
| Beatty Bros., Carlisle      | 1,211 | 8  | 2 |
| Little, Carlisle            | 1,200 | 0  | 0 |
| Metcalfe, Carlisle          | 1,177 | 0  | 0 |
| Bell, Carlisle              | 1,135 | 0  | 0 |
| J. Beatty, Carlisle         | 1,130 | 0  | 0 |

*Painter, &c.*

|                         |     |    |   |
|-------------------------|-----|----|---|
| Slee, Carlisle          | 118 | 10 | 0 |
| Hannah, Carlisle        | 115 | 10 | 0 |
| Allan, Carlisle         | 110 | 0  | 0 |
| Palmer, Carlisle        | 110 | 0  | 0 |
| Kirk & Robley, Carlisle | 102 | 0  | 0 |
| Harkness, Carlisle      | 99  | 16 | 8 |

**GIBRALTAR.**

For Assembly Rooms, Gibraltar. Mr. C. H. DRIVER, Architect. 5 Victoria Street, Westminster.

|                  |         |   |   |
|------------------|---------|---|---|
| Holmes           | £16,192 | 0 | 0 |
| Gentry           | 13,470  | 0 | 0 |
| Braid            | 12,607  | 0 | 0 |
| Saunders         | 12,008  | 0 | 0 |
| LASCELLES & Co.* | 11,587  | 0 | 0 |

\* Accepted subject to some modifications.

**HARDINGSTONE.**

For Construction of Sewers, Tanks, Buildings, &c., for Sewerage of St. James's End, Hardingstone. Messrs. INGMAN & SONS, Surveyors, Northampton.

|                             |        |   |   |
|-----------------------------|--------|---|---|
| Small & Son, West Bromwich  | £5,600 | 0 | 0 |
| Botterill, London           | 5,472  | 0 | 0 |
| Cooke & Son, Battersea      | 5,200  | 0 | 0 |
| Woodford & Son, Northampton | 5,025  | 0 | 0 |
| Chapman, Northampton        | 5,013  | 0 | 0 |
| White, Northampton          | 4,950  | 0 | 0 |
| Green Bros.                 | 4,910  | 0 | 0 |
| Martin, Northampton         | 4,882  | 0 | 0 |
| Finigan, Northampton        | 4,650  | 0 | 0 |
| Underwood, Wellington       | 4,528  | 0 | 0 |
| Schofield, London           | 4,500  | 0 | 0 |
| Cosford, Northampton        | 4,500  | 0 | 0 |
| Wingrove, Northampton       | 4,420  | 0 | 0 |

**GREENOCK.**

For Construction of Two Warehouses, each 90 feet long by 107 feet wide, of Brick, with Iron Columns, and Two Sheds, 500 feet by 107 feet in width, of Brick, with Iron Roofs, and Covered Way, 680 feet long by 27 feet wide, of Iron and Concrete, at the James Watt Dock. Mr. W. R. KINNIPLE, Engineer, 17 West Blackhall Street, Greenock.

J. & R. HOUSTON (accepted) . £27,000 0 0

**LONDON.**

For Enlargement of Board School, Stanley Street, Deptford. Mr. E. R. ROBSON, Architect.

|                   |        |   |   |
|-------------------|--------|---|---|
| F. & F. J. Wood   | £8,060 | 0 | 0 |
| Lathey Bros.      | 7,750  | 0 | 0 |
| Kearley           | 7,595  | 0 | 0 |
| Gentry            | 7,480  | 0 | 0 |
| Wall Bros.        | 7,422  | 0 | 0 |
| Wall              | 7,390  | 0 | 0 |
| Howell & Son      | 7,383  | 0 | 0 |
| Dowus             | 7,377  | 0 | 0 |
| Johnson           | 7,365  | 0 | 0 |
| Atherton & Latta  | 7,250  | 0 | 0 |
| Hart              | 7,249  | 0 | 0 |
| Tongue            | 7,225  | 0 | 0 |
| Smith & Sons      | 7,184  | 0 | 0 |
| Stimpson & Co.    | 7,160  | 0 | 0 |
| Oldrey            | 7,100  | 0 | 0 |
| W. & F. Croaker   | 7,070  | 0 | 0 |
| Jerrard           | 7,038  | 0 | 0 |
| Scrivener & Co.   | 6,923  | 0 | 0 |
| Holloway          | 6,877  | 0 | 0 |
| Turtle & Appleton | 6,840  | 0 | 0 |
| Cox               | 6,820  | 0 | 0 |

For Building Mission Room to Christ Church, Kenninghall Road. Mr. FRANCIS T. DOLLMAN, Architect. Quantities by Mr. F. W. Davis.

|             |        |   |   |
|-------------|--------|---|---|
| Boyce       | £1,333 | 0 | 0 |
| Brass       | 1,330  | 0 | 0 |
| Nightingale | 1,077  | 0 | 0 |
| Ashby Bros. | 1,073  | 0 | 0 |
| Dove Bros.  | 995    | 0 | 0 |
| Shurmur     | 990    | 0 | 0 |

**LONDON—continued.**

For Providing a Clock for the Town Hall, Bermondsey.

|               |     |    |   |
|---------------|-----|----|---|
| Bowman        | £35 | 0  | 0 |
| Cleaser       | 26  | 0  | 0 |
| Myers & Co.   | 26  | 0  | 0 |
| Benson        | 22  | 0  | 0 |
| Gillett & Co. | 20  | 0  | 0 |
| Clegg         | 19  | 10 | 0 |
| Brown & Co.   | 18  | 10 | 0 |
| Biddell       | 18  | 0  | 0 |
| Tree          | 12  | 0  | 0 |

*Builder's Work.*

|                    |    |    |   |
|--------------------|----|----|---|
| Russell            | 37 | 10 | 0 |
| Wells              | 27 | 10 | 0 |
| Eldridge           | 27 | 0  | 0 |
| Smith & Barnes     | 26 | 0  | 0 |
| Almond             | 16 | 0  | 0 |
| BULLERS (accepted) | 15 | 0  | 0 |

For Supplying Cornish Boiler, 20 feet by 6 feet, for the Commissioners of Public Baths and Washhouses, St. James's, Westminster.

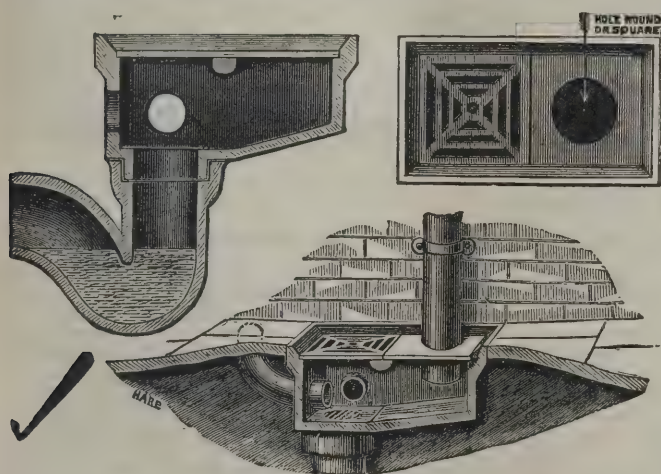
|  |      |    |   |
|--|------|----|---|
| McNeil, Whitechapel                    | £550 | 0  | 0 |
| Leete, Edwards & Norman, Euston Road   | 450  | 0  | 0 |
| Marshall, Whitechapel                  | 450  | 0  | 0 |
| May, Holborn                           | 397  | 0  | 0 |
| Hill & Sons, Heywood                   | 340  | 0  | 0 |
| Fraser, Commercial Road, E.            | 338  | 10 | 0 |
| Hornsby & Sons, Grantham               | 330  | 0  | 0 |
| Clayton, Preston                       | 320  | 0  | 0 |
| Dodman, King's Lynn                    | 318  | 0  | 0 |
| GALLOWAY & SONS, Manchester (accepted) | 297  | 0  | 0 |
| Hodge & Sons, Millwall                 | 296  | 0  | 0 |
| Wilson, Glasgow                        | 295  | 0  | 0 |
| Bellamy, Millwall                      | 285  | 0  | 0 |
| Renshaw, Kildgrove                     | 265  | 10 | 0 |
| Gimson & Co., Leicester                | 237  | 0  | 0 |

For Heating New Wesleyan Schools, Witney, Oxfordshire.

J. L. BACON & Co., London (accepted).

For Heating New Business Premises, Chenies Street, W.C.

J. L. BACON & Co., London (accepted).

**BELLMAN'S PATENT GULLY.**

This Gully possesses the following advantages:—

**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.**

**Avoids all Splashing.**

**Ventilates the Pipes and Trap.**

**Forms Drain for Area or Surface.**

**Is easy of Access for Clearance.**

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.

DESCRIPTIVE CIRCULAR ON APPLICATION.

**THIS GULLY IS HIGHLY RECOMMENDED by Authorities on Sanitary Matters.**

**PRICE AT WORKS, 8/6 EACH.**

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**BELLMAN & IVEY, 95 Wigmore St., London, W.**

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**FACSIMILE OF CARTOON BY PROFESSOR MAILLART.**

Size, Thirty-six Inches by Twenty-two Inches.

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May be obtained from all Newsagents or Booksellers, or from the

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**LONDON—continued.**

For Works at 24 Somerset Street, Portman Square. Mr. F. D. THOMSON, Architect, North Finchley.

|                  |      |    |   |
|------------------|------|----|---|
| Welch . . . . .  | £445 | 0  | 0 |
| Dixon . . . . .  | 390  | 0  | 0 |
| Thrum . . . . .  | 375  | 0  | 0 |
| Barnes . . . . . | 299  | 15 | 0 |

For Enlargement of Board School, Cold Blow Lane, Hatcham. Mr. E. R. ROBSON, Architect.

|                                 |        |   |   |
|---------------------------------|--------|---|---|
| F. & F. J. Wood . . . . .       | £7,397 | 0 | 0 |
| Downs . . . . .                 | 7,330  | 0 | 0 |
| Loneragan Bros. . . . .         | 6,934  | 0 | 0 |
| Wall Bros. . . . .              | 6,866  | 0 | 0 |
| Smith & Son . . . . .           | 6,857  | 0 | 0 |
| Patman & Fotheringham . . . . . | 6,844  | 0 | 0 |
| Wall . . . . .                  | 6,828  | 0 | 0 |
| Grover & Son . . . . .          | 6,825  | 0 | 0 |
| Tongue . . . . .                | 6,795  | 0 | 0 |
| Kearley . . . . .               | 6,787  | 0 | 0 |
| Kirk & Randall . . . . .        | 6,770  | 0 | 0 |
| Stimpson & Co. . . . .          | 6,753  | 0 | 0 |
| Johnson & Hart . . . . .        | 6,738  | 0 | 0 |
| Hart . . . . .                  | 6,687  | 0 | 0 |
| Howell & Son . . . . .          | 6,606  | 0 | 0 |
| Atherton & Latta . . . . .      | 6,600  | 0 | 0 |
| Jerrard . . . . .               | 6,579  | 0 | 0 |
| Scrivener & Co. . . . .         | 6,546  | 0 | 0 |
| Oldrey . . . . .                | 6,500  | 0 | 0 |
| W. & F. Croaker . . . . .       | 6,440  | 0 | 0 |
| Holloway . . . . .              | 6,386  | 0 | 0 |
| Cox . . . . .                   | 6,386  | 0 | 0 |
| Turtle & Appleton . . . . .     | 6,182  | 0 | 0 |

For Construction of Covered Playgrounds for Board Schools.

*Surrey Square.*

|                       |      |   |   |
|-----------------------|------|---|---|
| Reading . . . . .     | £336 | 0 | 0 |
| Holden & Co. . . . .  | 265  | 0 | 0 |
| Ewart & Son . . . . . | 256  | 0 | 0 |

*Thornhill Road.*

|                     |     |   |   |
|---------------------|-----|---|---|
| Riley Bros. . . . . | 156 | 0 | 0 |
| Woollams . . . . .  | 125 | 0 | 0 |

For Enlargement of Teachers' Room at Board School.

*Westmoreland Road.*

|                       |     |   |   |
|-----------------------|-----|---|---|
| Nightingale . . . . . | £73 | 0 | 0 |
| Ash . . . . .         | 70  | 0 | 0 |

**LONDON—continued.**

For Partitions at Board Schools.

*High Street, Bromley.*

|                            |     |   |   |
|----------------------------|-----|---|---|
| Atherton & Latta . . . . . | £99 | 0 | 0 |
| Robey . . . . .            | 85  | 0 | 0 |
| Sargeant . . . . .         | 75  | 0 | 0 |

*Rushmore Road.*

|                 |    |    |   |
|-----------------|----|----|---|
| Boyle . . . . . | 44 | 16 | 0 |
| Pratt . . . . . | 35 | 0  | 0 |

*Creek Road.*

|                   |    |    |   |
|-------------------|----|----|---|
| Jerrard . . . . . | 68 | 15 | 0 |
| Higgs . . . . .   | 54 | 0  | 0 |

For New Entrance to Board School.

*Fountain Street.*

|                  |     |    |   |
|------------------|-----|----|---|
| Rice . . . . .   | £87 | 0  | 0 |
| Mallet . . . . . | 85  | 15 | 0 |
| Hobson . . . . . | 69  | 15 | 0 |

For Repairs to Furniture at Board Schools.

*Blundell Street.*

|                     |     |    |   |
|---------------------|-----|----|---|
| Davis Bros. . . . . | £10 | 18 | 0 |
| Cruwys . . . . .    | 10  | 10 | 0 |

*Medburn Street.*

|                     |   |    |   |
|---------------------|---|----|---|
| Davis Bros. . . . . | 7 | 18 | 0 |
| Cruwys . . . . .    | 7 | 5  | 0 |

*Creed Place.*

|                  |    |    |   |
|------------------|----|----|---|
| Bodker . . . . . | 11 | 15 | 0 |
| Jones . . . . .  | 10 | 12 | 2 |

*Calvert Road.*

|                  |   |    |   |
|------------------|---|----|---|
| Bodker . . . . . | 8 | 10 | 0 |
| Jones . . . . .  | 8 | 0  | 0 |

*High Street, Bromley.*

|                    |    |    |   |
|--------------------|----|----|---|
| Hughes . . . . .   | 13 | 19 | 0 |
| Richards . . . . . | 10 | 5  | 0 |

*St. John's, Limehouse.*

|                    |   |    |   |
|--------------------|---|----|---|
| Richards . . . . . | 8 | 19 | 0 |
| Hughes . . . . .   | 8 | 6  | 6 |

*Randall Place.*

|                    |    |    |   |
|--------------------|----|----|---|
| Williams . . . . . | 12 | 5  | 0 |
| Jones . . . . .    | 9  | 15 | 8 |

*Alewis Street.*

|                    |   |    |   |
|--------------------|---|----|---|
| Williams . . . . . | 9 | 17 | 0 |
| Jones . . . . .    | 9 | 15 | 8 |

*Canterbury Road.*

|                    |    |    |   |
|--------------------|----|----|---|
| Williams . . . . . | 21 | 3  | 0 |
| Bodker . . . . .   | 20 | 17 | 6 |

**LONDON—continued.**

For Works of Cleaning at Board Schools.

*William Street.*

|                           |     |    |   |
|---------------------------|-----|----|---|
| Knight & Walden . . . . . | £27 | 18 | 0 |
| Tait & Co. . . . .        | 25  | 0  | 0 |

*Great Queen Street.*

|                     |    |    |   |
|---------------------|----|----|---|
| Davis Bros. . . . . | 19 | 12 | 0 |
| Tait & Co. . . . .  | 15 | 10 | 0 |
| Hornett . . . . .   | 15 | 10 | 0 |

For Ground-glass Framed Tablets at Board Schools.

*Ruby Street.*

|                         |     |    |   |
|-------------------------|-----|----|---|
| Davis Bros. . . . .     | £31 | 0  | 0 |
| Hammer & Co. . . . .    | 27  | 12 | 0 |
| Richards . . . . .      | 26  | 0  | 0 |
| Lascelles & Co. . . . . | 24  | 0  | 0 |

*Gloucester Road.*

|                     |    |   |   |
|---------------------|----|---|---|
| Cruwys . . . . .    | 19 | 2 | 0 |
| Davis Bros. . . . . | 17 | 0 | 0 |
| Richards . . . . .  | 14 | 5 | 0 |

*Princess Terrace.*

|                     |    |    |   |
|---------------------|----|----|---|
| Davis Bros. . . . . | 27 | 0  | 0 |
| Cruwys . . . . .    | 25 | 0  | 0 |
| Richards . . . . .  | 22 | 10 | 0 |

**RAMSGATE.**

For Building Show-rooms and Warehouses, King Street, Ramsgate, for Mr. W. P. Blackburn. Mr. E. L. ELGAR, Architect, Ramsgate.

|                                  |        |   |   |
|----------------------------------|--------|---|---|
| Miller . . . . .                 | £1,875 | 0 | 0 |
| Smith . . . . .                  | 1,799  | 0 | 0 |
| Martin . . . . .                 | 1,395  | 0 | 0 |
| Forwalk . . . . .                | 1,285  | 0 | 0 |
| Port . . . . .                   | 1,280  | 0 | 0 |
| NEWBY BROS. (accepted) . . . . . | 1,198  | 0 | 0 |

All of Ramsgate.

**STONE.**

For Works in Victor Street, West Stone. Mr. J. J. CHAPMAN, Surveyor.

|                                      |      |   |   |
|--------------------------------------|------|---|---|
| Buck, Burslem . . . . .              | £143 | 0 | 0 |
| Mackay, Stoke-on-Trent . . . . .     | 140  | 0 | 0 |
| Turner, Stone . . . . .              | 125  | 0 | 0 |
| EMERY, Stafford (accepted) . . . . . | 119  | 6 | 6 |

# ARTISTIC VENTILATION.



## SHARP & CO., Hygienic and Hydraulic Engineers.

### TESTIMONIAL

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

HYDRAULIC RAMS (FYFE'S PATENT) AND SANITARY APPLIANCES.

Health Exhibition Awards:—1 GOLD, 1 SILVER, 4 BRONZE MEDALS.

11 HOLBORN CIRCUS, LONDON, E.C.

**PRIMROSE & CO.**  
CHURCH ST.  
SHEFFIELD.

**ECLIPSE** PATENT ROOF GLAZING

NO PUTTY, PAINT, ZINC OR OTHER PERISHABLE MATERIAL.

IN EXTENSIVE USE FOR RAILWAY STATIONS, MILLS, &c.  
NO OTHER GLAZING CAN BE WARRANTED INDESTRUCTIBLE.

PRIZE MEDAL AWARDS, KENSINGTON, MANCHESTER, LIVERPOOL, DONCASTER 1882.3.  
THE ONLY GLAZING AWARD, INTERNATIONAL HEALTH EXHIBITION, 1884.

## READING CASES FOR THE ARCHITECT.

Price Two Shillings.—Office: 175 Strand, London, W.C.



## LYNN.

For Building Wesleyan Chapel and School, London Road, Lynn. Mr. JOHN A. HILLOM, Architect.

*Chapel and School.*

|                    |        |   |   |
|--------------------|--------|---|---|
| Broadhurst, March  | £2,802 | 0 | 0 |
| Bardel Bros., Lynn | 2,600  | 0 | 0 |
| Dye, Lynn          | 2,575  | 0 | 0 |
| Brown, Lynn        | 2,560  | 0 | 0 |
| Porter, Southey    | 2,538  | 8 | 0 |
| Jarvis, Lynn       | 2,500  | 0 | 0 |
| Collenson, Lynn    | 2,472  | 0 | 0 |
| Bennett, Downham   | 2,450  | 0 | 0 |
| Impson, Swaffham   | 2,448  | 0 | 0 |
| LEACH, Lynn*       | 2,355  | 0 | 0 |
| Fayers, Lynn       | 2,300  | 0 | 0 |
| Dawes              | 1,997  | 0 | 0 |

*Fencing (extra).*

|              |     |    |   |
|--------------|-----|----|---|
| Porter       | 128 | 0  | 0 |
| Bennett      | 100 | 0  | 0 |
| Dye          | 99  | 0  | 0 |
| Broadhurst   | 94  | 0  | 0 |
| Impson       | 89  | 0  | 0 |
| Fayers       | 73  | 0  | 0 |
| Brown        | 72  | 0  | 0 |
| Collenson    | 72  | 0  | 0 |
| Dawes        | 68  | 0  | 0 |
| Bardel Bros. | 67  | 12 | 0 |
| LEACH*       | 65  | 0  | 0 |
| Jarvis       | 52  | 0  | 0 |

\* Revised and accepted.

## NEWARK.

For Building Seven Houses, Newark, for Mr. William Blyton. Mr. GEORGE SHEPPARD, Architect, Newark.

|                  |        |   |   |
|------------------|--------|---|---|
| Smith & Lunn     | £1,790 | 0 | 0 |
| Baines           | 1,665  | 0 | 0 |
| Crossland        | 1,610  | 0 | 0 |
| H. Duke          | 1,598  | 0 | 0 |
| Combes           | 1,570  | 0 | 0 |
| Brown & Sons     | 1,550  | 0 | 0 |
| Corham           | 1,545  | 0 | 0 |
| Wynell           | 1,520  | 0 | 0 |
| Thrale           | 1,480  | 0 | 0 |
| W. Duke          | 1,424  | 0 | 0 |
| Lane             | 1,400  | 0 | 0 |
| WHALE (accepted) | 1,290  | 0 | 0 |

## ST. BEES.

For Construction of Branch Sewers, St. Bees. Mr. G. J. CLARK, Surveyor, Whitehaven.

|                           |      |    |   |
|---------------------------|------|----|---|
| Whinney, Whitehaven       | £253 | 5  | 0 |
| W. Smith, Workington      | 132  | 18 | 9 |
| Pearson, Cleator Moor     | 120  | 0  | 0 |
| Ferguson, Hensingham      | 110  | 5  | 4 |
| Bradley, Millom           | 110  | 0  | 0 |
| J. Smith, Egremont        | 110  | 0  | 0 |
| FLEMING & MURRAY, Cleator |      |    |   |
| Moor (accepted)           | 78   | 0  | 0 |
| Surveyor's estimate       | 110  | 0  | 0 |

## SOUTH NORWOOD.

For Additions to Board Schools, South Norwood. Mr. ROBERT RIDGE, Architect, Surveyor to the Croydon School Board.

|                              |      |    |   |
|------------------------------|------|----|---|
| Quantities by the Architect. |      |    |   |
| Barton                       | £559 | 10 | 0 |
| Holt                         | 525  | 0  | 0 |
| Howell                       | 495  | 0  | 0 |
| Bryan                        | 489  | 0  | 0 |
| Wyatt                        | 477  | 0  | 0 |
| Coles                        | 464  | 0  | 0 |
| Smith & Buller               | 454  | 0  | 0 |
| Sedgwick                     | 430  | 0  | 0 |
| Marriage (too late)          | 420  | 0  | 0 |
| Smith & Sons                 | 411  | 0  | 0 |

## SUNDERLAND.

For Building School, Brookside Estate, Sunderland. Mr. FRANK CAWS, Architect, Sunderland. Quantities by Mr. G. D. Irwin,

|                        |      |    |   |
|------------------------|------|----|---|
| Dunn & Co.             | £591 | 0  | 0 |
| Kerr, jun.             | 484  | 0  | 0 |
| Ebrick                 | 480  | 3  | 0 |
| Broad                  | 475  | 7  | 0 |
| Hirst & Sons           | 460  | 0  | 0 |
| Humble                 | 443  | 0  | 0 |
| Graham                 | 435  | 19 | 0 |
| Allison                | 420  | 0  | 0 |
| Scott & Sons           | 420  | 0  | 0 |
| Hudson, jun.           | 410  | 0  | 0 |
| Robb                   | 389  | 12 | 0 |
| Shafter                | 379  | 12 | 0 |
| G. & F. Hildrey        | 375  | 0  | 0 |
| LEITH & Co. (accepted) | 371  | 8  | 0 |

## SWANSEA.

For Making Additions to Vicarage, Walter Road, Swansea. Messrs. JAMES, SEWARD & THOMAS, Architects, Swansea and Cardiff. Quantities by the Architects.

|                                      |      |   |   |
|--------------------------------------|------|---|---|
| THOMAS, WATKINS & JENKINS (accepted) | £470 | 0 | 0 |
|--------------------------------------|------|---|---|

## WELLINGTON.

For Reflooring Board-room for the Improvement Commissioners, Wellington.

|                  |     |    |   |
|------------------|-----|----|---|
| Blanchard        | £37 | 10 | 0 |
| Trevor           | 34  | 0  | 0 |
| Roper            | 26  | 15 | 0 |
| Rullock & Co.    | 19  | 15 | 0 |
| Millington       | 19  | 0  | 0 |
| LUCAS (accepted) | 15  | 0  | 0 |

## WALSALL.

For Building New Saw-mill, Engine-house, Stable, and Offices, for Mr. A. G. Boys. Mr. PETER ADSHEAD, Architect, Walsall.

EVANS (accepted).

For Building Three Houses, Wednesbury Road, for Mr. Arthur Oakley. Mr. PETER ADSHEAD, Architect, Walsall.

INSLEY (accepted).

## YORK.

For Construction of Road at Acomb. Mr. G. J. MONSON, C.E., Surveyor, 13 New Street, York.

|                                 |      |    |    |
|---------------------------------|------|----|----|
| Wright, Northfield, Dringhouses | £565 | 12 | 2  |
| Nelson, York                    | 444  | 17 | 11 |
| Smith, Newcastle-on-Tyne        | 342  | 10 | 8  |
| Garforth & Sons, Mirfield       | 321  | 8  | 10 |
| Bolton, York                    | 315  | 0  | 0  |
| Spencer, York                   | 312  | 0  | 0  |
| Bentley, Woodhouse              | 311  | 6  | 9  |
| Ross, Bramley                   | 281  | 15 | 11 |
| Melvin, York                    | 288  | 10 | 0  |
| Bowman, York                    | 270  | 0  | 0  |
| Naylor & Birch, York            | 268  | 10 | 0  |
| Charlton, York                  | 257  | 0  | 7  |
| Lee, York                       | 240  | 4  | 0  |
| Clark, York                     | 230  | 0  | 0  |
| Hansom, York                    | 215  | 0  | 0  |
| BECK, York (accepted)           | 213  | 10 | 0  |

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FOR MURAL DECORATION.

Mosaic Works conducted on the same principle as in Venice and Rome by

A. CAPPELLO, 472 KING'S ROAD, CHELSEA, LONDON, S.W. Established in 1880. 15 YEARS IN ENGLAND WITH DR. SALVIATI.

The above Factory is established in London for the purpose making the Venetian Enamel Mosaic Work an English trade, and to reduce the cost to half the price that has been hitherto charged abroad or by the London agents.

See "Building News," Oct. 12, 1883, in reference to the Mosaic Pictures for the new Church of the Brompton Oratory, executed by this Establishment.

Gold Enamel Mosaic Work at 15s. per square ft. Venetian Enamel Mosaic Figure Work at 20s. per square ft., including expenses of Fixing.

## MOSAIC PAVEMENTS.

YOCKNEY & CO., Quarry Owners. Prices quoted on application for Delivery at any Port or Railway Station, for all varieties of BATH STONE, { Selected specially to suit Architects' Specifications and Builders' use. Address—YOCKNEY & CO., Corsham Down Quarry, Wilts.



**BUILDING TRADES AND GENERAL  
MANUFACTURERS' EXHIBITION AT  
LEEDS.**

ON Saturday, the 17th inst., an exhibition embodying the above characteristics was opened in the Coloured Cloth Hall, Leeds, and is decidedly the best one of its kind that we have seen in the provinces. From his close connection with exhibitions held at the Agricultural Hall, and particularly with the annual building trades' display, Mr. Philip Shrapnel makes an admirable manager, and, as every year adds to the confidence that exhibitors repose in him, we may reasonably hope to see each one that is "built up," so to speak, under his guidance, an improvement on its predecessor. Leeds and its district are well represented, both in the heavy class of machinery for which she enjoys a well-earned reputation, as well as in the lighter and more ornamental articles required in the dwelling-house, which includes cabinet furniture, blinds, school furniture, grates and ranges, &c. We select the following from amongst the general exhibits, as possessing the greatest amount of interest to our readers.

Messrs. C. KITE & Co., Christopher Works, 117 Chalton Street, N.W., are present with models and full-sized specimens of their different ventilators and system of ventilation as applied to an entire building, or in the case of drains to an entire row or street. Having been awarded the gold medal for their exhaust ventilator, and a silver for the drain ventilator at the late Healtheries Exhibition, they now stand in the front rank as regards awards. A meed of praise is certainly due to them for the attractive and ingenious modes in which they have disguised the presence of inlet ventilators. Thus a mirror, a charming little cabinet, and kindred ornamental adjuncts have been so cunningly devised, that although to all appearance they are simply what they profess to be, they are all the while discharging fresh air into the apartment from the outer atmosphere "unseen and unheard." We are justified in say-

ing as much in favour of their chimney-breast ventilator, large numbers of which are now in use, specified for by some of the most noted architects, and scarcely known to fail in the slightest degree.

Of local firms as ventilating engineers, Mr. JAMES EDWARD ELLISON, Victoria Square, Leeds, contributes a very attractive stand, artistically built up of his various ventilating appliances. Amongst these are to be found his well-known "Radiator" ventilator, and conical perforated bricks and air-grates; Stevens' patent exhaust, turret, and soil-pipe ventilators, of which he is now the maker; and the exhibit is further supplemented by a collection of Cooper's glass louvre ventilators, smoke-testing machine for drains, fumigating, &c. (Baird, Thompson & Co.'s patent).

Earth closets are represented by MOULE'S PATENT EARTH CLOSET COMPANY, Limited, Garrick Street, Covent Garden, who again at the Healtheries carried off the palm (gold medal) from all competitors. The extensive ramifications of this company, the superiority of their manufactures, and the well-known abilities of their engineer, have placed them in a very advanced position in this increasing industry.

The HOPTON WOOD STONE COMPANY, Wirksworth, show some fine examples of their celebrated Yorkshire stone. There is an excellent specimen in the form of a chimney-piece, in what they term their wood stone. The samples of fossil marble and other specimens of wood stone are highly interesting, and point to the varied purposes to which the contents of the Hopton Wood quarries may be made available. There is also to be seen a collection of paving setts, cubes, and chisel-dressed kerbings, all of which are extensively used in the northern district as well as other parts of the country.

Another firm of note in this part of the kingdom showing Yorkshire stone is Messrs. THOMAS WOOD & Co., of the Spinkwell Quarries, Bradford. The principal feature in this stone is its purity of colour and evenness of texture, which causes it to rank amongst the very best emanating from the county. The quality of the

material is seen in a thoroughly finished monumental cross exhibited here, though perhaps to the untechnical observer the Spinkwell stone would show to better advantage in a properly worked than ornamental state, as it appears in the example named.

Horticultural work is exhibited by the noted North of England firm, Messrs. W. RICHARDSON & Co., of Darlington. They show a very useful and inexpensive improved portable span garden-frame, 8 feet long by 6 feet wide, easily fixed, and as readily taken to pieces. There are also samples of their glazed wall tree protectors, of different widths, to which the foregoing remarks also apply, and they exhibit a variety of well-made models of horticultural buildings, showing their patent system of ventilation. Their Parisian greenhouse blinds, made of wood and zinc, will be found excellent adjuncts to any conservatory. They show in addition several boilers possessing great heating power, one of these being their patent hooded tubular boiler, with a heating power of 850 feet of 4-inch piping. The display is supplemented with a collection of hot-water valves and fittings.

Mr. R. ADAMS, of Blackman Street, Borough, is present with his usual collection of fanlight openers, safety windows, and the numerous *bric-à-bracs* connected with windows and doors, for which he has become famous, and that we have called attention to on many occasions. There are two new features shown here for the first time, one of which in particular is ingenious, and will no doubt be extensively adopted. It is a new spring hinge, named the "Victor," for double-action doors, composed of two strong coils, capable of resisting hurricanes, however exposed the situation; and should the wind be blowing in an opposite direction to that for which the one spring is set, they can be reversed in a few seconds by any unpractical person with the assistance of a bradawl or any similar tool, and they can be adjusted to the greatest nicety, to compensate for wear, so as to adjust the door to its true centre position. The strength of the springs of the "Victor" is greatest when the door is closed, and diminishes with a pleasant easy motion as it is opened

# "THE BANQUET."

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When this hinge is kept properly oiled, the door will close with perfect silence; and a further advantage claimed for it is that, when repairs are needed, it can be done on the premises, and without taking down the door. An improvement is also shown in his patent fanlight opener, by which the mode of fixing is simplified, and is effected without cutting away the smallest piece of woodwork, all the parts being made to be screwed on instead of being let into the frame.

Messrs. HODKINSON & CLARK, Limited, Canada Works, Small Heath, Birmingham, make an imposing display of their well-known specialities, which have been so often mentioned in these columns that detailed recapitulation is not needed on this occasion. Manufacturers of school furniture will find they have now to do battle with this enterprising Birmingham firm in addition to their other competitors. Messrs. Hodkinson & Clark have thrown a *verve* into this branch of their manufactures since they commenced it, highly creditable to themselves and pleasing to those who have to use the appliances, and their improvements show, amongst other things, how much can be effected at a small additional cost, where a little taste is exercised. A schoolroom should be made as pleasing in its surroundings as possible, with, of course, a due regard to economy, and this has evidently been a point of study with the firm. Besides the display of school furniture and appliances, the exhibit contains a varied assortment of the firm's stained-glass windows, blinds, revolving-shutters, and "lights" of different character.

A good collection of wood-working machinery is shown by Messrs. WILSON BROS., Victoria Road, Leeds, a firm who have secured considerable reputation for the superiority of their work. There are several specimens of combined circular and band-sawing machines and circular saw benches for both hand and power suitable for different trades, including a very useful band-saw, for fixing to a bench or post, that will cut straight or in a curve up to 6 inches thick. The Leeds Improved Circular

Saw Bench is also worthy of remark. Twenty-four inches long, it is fitted with a rising and falling spindle running in long gun-metal adjustable bearings, that are raised and lowered by a screw and hand-wheel, for purpose of ripping, cross-cutting, rabbeting, tenoning, grooving, &c. It is a very substantial machine, the frame being cast in one piece. The Leeds Improved Band-sawing Machine is no less notable. The wheels are of wrought-iron, made on the "Ariel" or bicycle pattern, which secures strength with lightness, and a better appearance than the heavy-looking cast wheels generally attached to them. The desire of the makers has also been to prevent the breakage of the saws, and this is to a great extent obviated by facing the wheels with indiarubber, which secures greater flexibility than leather. There are several points in this machine of decided advantage, which space prevents our noticing, but which may be known by writing for the firm's circular. A new centre-motion mortising, boring, and tenoning machine is also exhibited, which secures a greatly increased power, and reduces the wear and tear usual upon the side-crank pinion wheels and toggle movement. There are several other machines of merit on this stand well worth the attention of the building trade.

Mr. JOSEPH SHAW LOCKWOOD, Huddersfield, shows Milan & Shaw's patent indicator for the prevention of household boiler explosions and indicating the water supply, a well-devised and useful addenda to the kitchen range where high-pressure boilers are in use; Shaw's patent Universal Union Joint, an ingenious invention that has secured a large sale; and other useful inventions.

Wood-working machinery, of good quality, is exhibited by JOSEPH GREEN & NEPHEW, of the Globe Point Ironworks, Crown Point Road, Leeds, and in connection with this exhibit Mr. ROBERT STEEL provides a  $3\frac{1}{2}$  horse-power gas-engine, with some commendable features for driving the machines.

Messrs. J. SAGAR & Co., Well Lane, Halifax, also show some excellent wood-working

machinery, a prominent feature being their "Premier" hand and power feed planing and thicknessing machine, which effects a large amount of different classes of work, including chamfering, bevelling, surfacing, straight or taper-work, &c., at varying speeds, and one of Steel's gas-engines is also employed at this stand.

Mr. WM. JOHNSON, Queen's Road, Leeds, sends his patent lever steam brick-pressing machine, which is capable of turning out 10,000 semi-plastic bricks per day ready for the kiln, from any grindable clay or marl. It can also be used for pressing peat, patent fuel, &c., and appears to be a most reliable piece of machinery.

Stone-breaking machinery is exhibited by Mr. H. R. MARSDEN, of Leeds, whose apparatus has been before the public for many years, and has proved of great value to those requiring such appliances, Messrs. W. H. BAXTER & Co., of Leeds, contributing a similar machine with a knapping motion, that has also secured a large amount of patronage.

The well-known firm of SAMUEL DENISON & SON, of Leeds, contribute a commendable collection of weighing machinery suitable for different trades, a prominent feature being their suspended machine weighing up to ten tons, made without springs, employing no liquids or loose weights. This is an admirable appliance, strictly accurate, and has secured a large amount of patronage.

Mr. WILLIAM COURT, of Court Street, Carlisle, exhibits a new invention in block flooring that we believe is destined to supersede ordinary parquetry to a large extent. Every kind of design applicable to parquetry can be carried out by this invention, each block being cut by machinery with a dovetailed tongue underneath, so that when laid in composition it is impossible to loosen or lift it. As we purpose giving illustrations of this invention at a future date, we defer more detailed remarks for the present.

Messrs. DOULTON & Co., of Lambeth, are present with a selection of their most recently

# RICHARDSON'S HORTICULTURAL BUILDINGS.



Erected in any part of the Kingdom with Hot Water Heating Apparatus, &c., complete.

ARCHITECTS' DESIGNS FOR CONSERVATORIES, &c.

Carried out with great care, correct in detail, and with the latest improvements in Construction.



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Sole Agents in Great Britain for the Parisian Blinds for Greenhouses, so largely used on the Continent. They are made of Wood and Zinc only.

NORTH OF ENGLAND HORTICULTURAL WORKS—

**DARLINGTON.**



introduced sanitary appliances, Doulton ware, &c., of similar character (though on a smaller scale) to those exhibited at the late Health Exhibition, and that were fully described in the columns of *The Architect* on that occasion.

The AIRESIDE HEMATITE IRON COMPANY, Leeds, show a good collection of concrete of a most multifarious character, showing that they are by no means behind any of their competitors in the manufacture of this useful material; in fact they may fairly be said to be in advance in some features, a dado, with red ornamental panel, and other specimens of ornamental concrete, having elicited general approbation.

Messrs. ILLINGWORTH, INGHAM & Co., of Leeds, make a large display of school furniture of improved design, strong, well made, and looking fit for hard work. The exhibit is supplemented with a variety of machine-made wood mouldings, wood turnery, Swedish doors, &c. This firm have extensive ramifications and several branch establishments, enabling them to turn out an immense quantity of work in a short time.

Messrs. VERITY BROTHERS, of Call Lane, Leeds, whose inventions in connection with window-openers, skylight-lifters, and reversible sash-windows are well known to the profession and building trade, are present with their several appliances, amongst which we notice a new reversible sash-window that must secure the approbation of all who see it. Although strong, it is of the most simple character as regards its attachments. The pivot is carried through the framework of the window, thus securing great strength. We have always been of opinion that too much strength could scarcely be employed in this part, and when it is remembered that the sash is dependent on these two pinions for its fixity, this much will be admitted. The breakage of one of these would in all probability cause the sash to fall into the street, and probably with results of a most distressing character. Another new invention shown by Messrs. Verity Brothers is a blind action of the most simple and effective character.

Messrs. A. ATTWOOD & Co., successors to Messrs. Salmon, Barnes & Co., of Ulverston, have sent their several specialities in lifts, containing their patent self-sustaining gear, revolving shutters, &c., with which the readers of *The Architect* are generally conversant.

Messrs. H. THOMPSON & Co., Merrow Street, Walworth, show their noted magnetic iron oxide paint, for which a gold medal was awarded them at the late Healtheries. These paints are suitable alike for all materials, whether wood, iron, stone, or brick. They possess great tenacity of incorporation with the substance they are set to cover, and do not scale. Examples of their damp proof wall-paint are also shown, water being unable to penetrate it.

Messrs. CORDINGLEY & SONS, Thorncliffe, Bradford, exhibit a variety of specimens of their patent fibrous plaster, concrete granite faced, and a new decorative material that they have named Parianetic, from its similarity in appearance to Parian china. The exhibit is especially noteworthy for the excellence and varied character of the designs in fibrous plaster, which cover a wide range, including pilasters in the Queen Anne and "Adam" style, enriched cornices, over-mantels, consoles, full-sized statues, &c., the new Parianetic having that beautiful dull gloss appertaining to real Parian. The granite-faced concrete is no less commendable, and is in large demand, the customers of the firm including the War Department, Board of Works, and other public bodies, who have testified to its great strength and universal adaptability.

Messrs. KAYLL & Co., Aire Street, Leeds, add to the artistic appearance of the exhibition by their choice display of painted and stained glass, the examples being of a very meritorious character. One of the principal exhibits is a panel representing the arts and sciences, designed and carried out by the firm for the new Technical College at Bradford. Two other panels of equal merit have been made for a private mansion in the neighbourhood of Leeds. There are several specimens of windows in rolled cathedral and antique glass, and also muffled glass in attractive kind for leaded work.

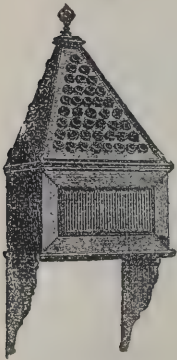
A variety of casements in stained glass, suitable for ecclesiastical purposes, including the hopper, fall-back hopper, pivot casement, &c., lend an additional attractiveness to the exhibit, which in addition comprises samples of glass of various thicknesses and colours, as well as brilliant cut-glass. This firm hold a high reputation in their art, and we understand have recently been obliged to increase their staff of artists, lead glaziers, &c., from the number of orders on hand.

The HARDING VENTILATOR COMPANY, East Parade, Leeds, exhibit their principle of ventilating buildings without draught by means of their patent air-diffusers, of which we append some examples. This mode of ventilation has been very extensively adopted in the midland and northern counties in both public and private buildings for the last four or five years, and has given general satisfaction, though as yet it does not appear to have been brought prominently into notice in the metropolis. For an ordinary apartment the Air-Diffuser consists of a small projecting box, as shown in our sectional engraving. It has a semi-pyramidal top, perforated with small tubes of wood, set in rows, on the three triangular faces of which the upper part is composed. Below the triangular part is a small box or cabinet, supported on brackets, and contains a door for the insertion of a filter, composed of a very fine silk gauze, such as is used in the milling trade for passing flour through, and which frees the incoming air from dust and other impurities. The apparatus being fixed against the wall, communication is made with the outer atmosphere, as shown in the illustration, and the air entering through the aperture first passes through the filter and then into the room through the small tubes, which are placed at an angle of about 30 degs. with the wall. The apparatus is fixed at about 7 feet 6 inches from the floor level. When passing through the tubes the currents of air are necessarily compressed, but immediately they are released they again expand, and diffuse themselves in all directions, so that all draught is counteracted. It is almost

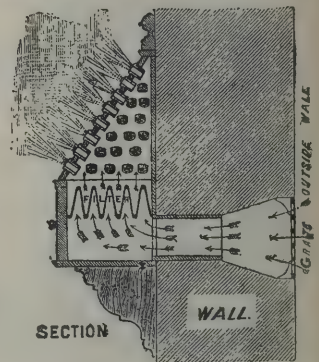
# THE "HARDING" VENTILATING COMPANY,

30 EAST PARADE, LEEDS.

## HARDINGS' PATENT AIR DIFFUSER FOR VENTILATING ALL KINDS OF BUILDINGS.



Diffuser with Filter.



Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.

**CHURCH WALL VENTILATOR.**—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

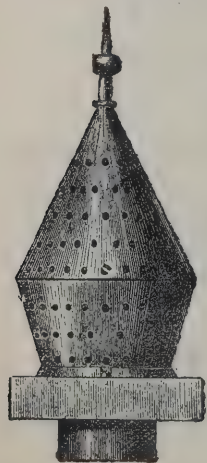
**OUR PATENT EXTRACTOR** is the best in the Market, and is supplied at a very much lower price than any other.

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"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

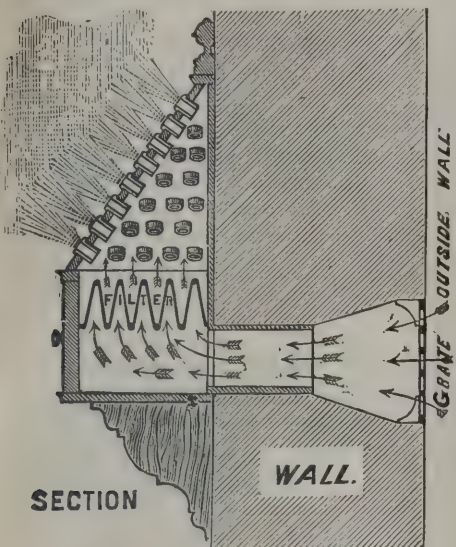
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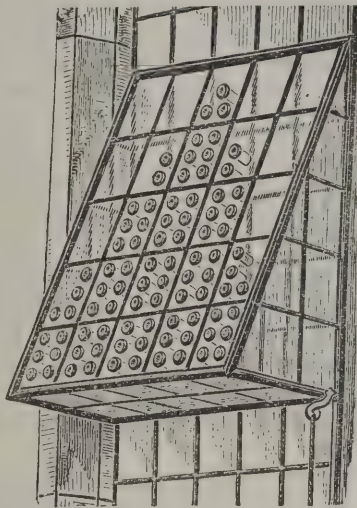


unnecessary to add that the diffuser can be made in any style, so long as the pyramidal form is retained at the top, and may even form a receptacle for holding ornaments. For instance, Messrs. Harding received orders from



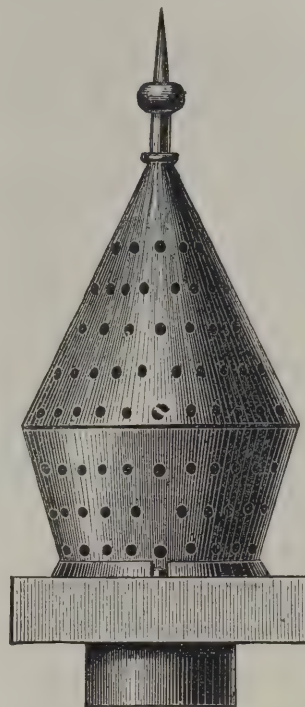
the Dean of York to ventilate Archbishop Zouche's Chapel in York Minster, and for this a special design was made, in which the trefoil and the angular form were combined, the success, both as regards design and ventilation, being so perfect as to call for the highest encomiums from the Dean. From what we have seen of the Harding Air Diffuser we feel bound to speak of it in the highest terms, and we may add that it is generally accompanied by a simple valve, by which the amount of incoming fresh air can be regulated at will. The addition of the filter, and particularly of one of the material employed by the Messrs. Harding, is of the greatest value; for we have only to look at any

wall where an inlet ventilator is fixed that does not possess a filtering medium to see how soon it becomes discoloured. For the extraction of vitiated air in an ordinary apartment the open fire-grate will often be found sufficient, but any improved form of outlet ventilator may be used if necessary, and in a large building containing a sunlight there would be no need of any other appliance; but we call attention to Messrs. Harding's air extractor below. Another form in which the Harding ventilator has been found of great service is in our next illustration, de-



signed for a church window. Here the tubes are composed entirely of glass, but, it will be observed, the pyramidal form, which is one of the salient features in the Harding system, is still retained. The fresh air is admitted here at the outside bottom. We now give an illustration of the firm's patent air extractor, which is a fixed appliance of simple construction, and very inexpensive. It consists of two perforated cones and a central tube. The air impinging

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# The Architect.

## THE WEEK.

THERE was a discussion lately at the Institute of Architects about the management of the library, which suggested one of the difficulties of a librarian's office. People are everywhere fond of taking up books, glancing at them, laying them down with the intention of having another glance, and then forgetting all about them. In the British Museum there is constant inconvenience in the Reference Library by the practice. Where books are lent it prevails as far as limits allow, and every librarian knows that books are returned to him which have never been opened by the borrowers. In a limited library any irregularity becomes almost fatal, and we are not surprised to find that in consequence of the delay in returning books, the Council of the Edinburgh Architectural Association have been compelled to close the library until further notice. Some of the books are mere shilling volumes, which the members might be supposed to be able to purchase; but works like VIOLLET-LE-DUC'S "Dictionnaire" in several volumes, and SHARPE'S "Parallels," are expensive, and may be often needed for reference, and it is selfish on a borrower's part to detain them longer than is necessary.

THE collection of architectural drawings which was exhibited at the Institute was of extreme interest. It was curious to observe the contrast between the old and the modern styles. The bulk of the drawings belonged to the present century, and certainly there was a great variety in the execution. A larger number of THOMAS ALLOM'S drawings might have been obtained. No man was more loyal to the profession. It would also have been of interest to have had some of the sketches which were made by H. K. BROWNE ("Phiz") about the same time as those by MCKENZIE, and more than one of TALBOT BURY'S drawings or lithographs should have been exhibited. DIGBY WYATT'S vigorous sketches of Italian detail were also deserving of some notice. But the difficulty of gathering a number of drawings must be considered, and the limited space which had to be filled.

A REMARKABLE discovery has been made near Paris, being nothing less than a work of PHILIBERT DELORME, and of all places it has been found at Mont Valérien, which is supposed to be the principal fort in connection with the defence of the city. The work in question is an arcade, with niches for statuary, which at one time formed the entrance to the cemetery at Nogent. On the destruction of the cemetery, the arcade was given over to the monks of Calvary, who had a house there. They preserved it until some time in the last century, when it was purchased by a gentleman, who converted it into a park entrance. Under what circumstances it found its way from a village on the east side of Paris to a fortification on the west side has yet to be discovered, but there appears to be sufficient evidence to satisfy French archaeologists of the genuineness of the arcade as a work of the architect of the Tuileries, who died in 1577. It might with more reason be supposed to have formed a part of the structure which surrounded the Calvary, which was founded on Mont Valérien in the reign of LOUIS XIII., and became a place of pilgrimage from all parts of France.

THE last competition of the Bradford School Board by itself is enough to demonstrate the necessity of a professional assessor, and make architects refrain from competing unless one had been nominated. About seventy sets of plans were submitted, and eventually the prize was awarded to a design described as "No. 24," which bore the motto, "Thought, Examples, and Experience." The process of selection was irregular, even if judged by committee morality. Five sets, including No. 7 and No. 24, were selected on December 10; nine days afterwards No. 7 and No. 24 were set aside. The chairman of the Board about that time was attacked with sciatica, and from his sick chamber he sent a request that No. 7 and No. 24 should be re-admitted. The members could hardly refuse anything

that would assuage the pains of their chief, so the plans were brought back. Afterwards there was a convenient absence on the part of some of the members, others were tacticians, and declined to vote at certain times. In this way No. 24 found itself chosen. The spirit in which the Board discharged their duties may be inferred from a statement of the chairman. He said that "he had never in any way sought to influence votes since he had been on the Board for any friend of his, or in the interests of any special party. He had been asked to vote for the appointment of a certain individual, on condition that if he did so the member making the request would vote for a friend of his, but he declined to do that." This may exonerate the chairman, but, from what he says, it is plain that log-rolling prevails in the Board-room, and is looked on as a part of the machinery of business. At the last meeting of the Board, a few members who suffered compunctious visitings of conscience for their former indifference brought up the subject of the late competition, with curious results. An equal number of votes was given for and against an amendment disapproving of the action of the Sites and Buildings Committee. The casting vote of the chairman upheld the committee. The same thing happened when the formal award of the prizes in the competition was proposed. A member finally proposed that Mr. E. R. ROBSON or another experienced architect should be asked to give a report on the designs, and once more the casting vote of the chairman decided the contest. Whether the opponents of the fortunate design are correct it is impossible to say, but a prize won under such circumstances cannot give much pride to the possessor.

AN exhibition of the works of the late HANS MAKART has been opened in Vienna, but it does not contain the pictures on which the painter's reputation mainly depends. The *Catherine Cornaro* is in Berlin, the *Entry of Charles V.* is in Hamburg, the *Plague of Florence* is in Florence. The picture called *Printemps*, on which MAKART was engaged at the time of his death, has been withheld, as his executor feared damage might arise to it while being carried to the exhibition. It is considered that the principal attraction in the gallery is the unfinished series of paintings which MAKART had in hand for the new Fine Arts Museum in Vienna. After the exhibition closes there will be a sale of the valuable collection of *bric-à-brac* belonging to the artist, which is likely to attract many connoisseurs.

A MEETING of the archdeacons and rural deans, under the presidency of the Bishop of the Diocese, was held at Norwich, on Saturday last, for the purpose of electing a surveyor for ecclesiastical dilapidations in the place of the late Mr. PHIPSON, F.S.A. It was unanimously decided to have two surveyors in the place of one. Mr. HERBERT GREEN, of Norwich, and Mr. E. F. BISSHOPP, of Ipswich, were elected, Mr. GREEN obtaining twenty-five votes, and Mr. BISSHOPP eleven votes. Mr. CLEMENCE, of Lowestoft, Mr. LACEY, Mr. WILLINS, and Mr. PEARCE, of Norwich; Mr. LÖHR, Mr. ROLFE, and Mr. MILNE, of London, were also candidates.

It has been resolved that the exhibition of the works of EUGÈNE DELACROIX, which is expected to be a source to derive money for the memorial, is to be held in the Ecole des Beaux-Arts, Paris, from March 1 to April 30. MM. MEISSONIER, PAUL DUBOIS, BAUDRY, GÉROME, LÉON BONNAT, and JULES DUPRÉ, on the part of the Memorial Committee, have been requested to solicit the loan of works for the exhibition. There are not many of the painter's works in this country, but Sir RICHARD WALLACE possesses *The Death of Marino Faliero* and *Faust and Mephistopheles*.

A CASE which was heard in the Preston County Court on Monday may serve as a warning to investors in antique furniture. Mr. HENRY LORD, architect, in December last purchased an oak chest and chair for 10*l*. According to his evidence, the dealer stated that the carvings on both were ancient. When the two articles were submitted to an expert on their arrival in Manchester, he said that the woodwork of both articles was ancient, but the carving, with the exception of a small portion, was modern. The dealer denied having given a warranty, and the judge nonsuited Mr. LORD. The moral to be drawn is to have the warranty in writing, if the purchaser cannot trust his own judgment.



## THE ASSOCIATES' VOTE AND THE INSTITUTE CHARTER.

THE memorial presented in the name of the Associates of the Royal Institute of British Architects at the opening meeting of this session was a very important one. It was extensively signed, and those who supported it, judging from the reports of the meeting held during the last conference, are unanimous in their action and resolute in carrying their desire into execution. What is sought for is that the franchise of the Institute shall be extended to themselves, the Associates. The answer to this demand has hitherto been, "The charter is against you." The Associates reply, "Then let us have it altered." Mr. CATES, one of the strongest men on the Council, and always earnest in his support of young men, some time ago foreshadowed changes that would demand some revision of the charter and extension of the aims of the Institute. Mr. CHRISTIAN, the President, in his observations on the occasion of the presentation of the memorial, gave great encouragement to the Associates, and stated that in the address which he was about to deliver he had anticipated their wishes. The conclusion we draw from this is, that many of the Council are fully alive to the alterations that have taken place in the profession generally, and are anxious to march with the times, and, by judicious and well-considered reforms, to strengthen the Institute and make it more popular and representative.

At the time the charter was granted, the Associates were a very small number, and doubtless were chiefly drawn from the class of assistants who were, so to speak, probationers, hardly representative of the profession. Since 1837 (the date of the charter) the class of Associates has risen to the large number of over 690, and exceeds the number of the Fellows by over 280. In the ranks of the Associates are to be found men who are quite as competent as many of the Fellows, carrying out important works, entrusted with large responsibilities, and in the enjoyment of fairly lucrative practices as architects and surveyors. Many of these gentlemen would doubtless become Fellows of the Institute but for the fact that, under the charter, they would be debarred from following their practice of taking out quantities. Another reason that may be urged in favour of a vote being given them is, that recently a by-law has been passed making it obligatory for Associates to pass a test examination before admitting them to the Institute, thus raising the standard, but hitherto granting no additional privilege to those who pass the examination and present themselves for election.

Then the contribution made by the Associates to the funds of the Institute is a very large proportion, yet, under the present restrictions, they have no voice whatever in the expenditure of the income they subscribe. In other societies incorporated recently, such as the Surveyors' Institute, which is very flourishing and well organised, the Associates have a vote. Again, the extension of the franchise in the political world has called attention to the anomaly which exists in the Institute of Architects, and no surprise need be felt that the Associates have at last determined to try and see whether they cannot remove the reproach which now attaches to them, and obtain from the President, Council, and Fellows a right, which, we can see no reason should be withheld any longer. We can trace no sign of any real opposition to this reasonable request; only advantage can result from acceding to it, and this should be done with courtesy and graciousness. We believe that those who are most alive to the good of the profession will lend their aid to accomplish this object, and the Associates themselves should not rest satisfied or accept anything short of a vote equal to that enjoyed by the Fellows. That there should be certain restrictions in their voting power is reasonable and usual in all such societies.

The difficulty that many Fellows will see in the touching of their charter is, perhaps, the sacrifice of it in its present form. But if to conserve it they are compelled to withhold this measure of justice from the Associates, they must be prepared to see a large secession from the ranks of the Institute, which will most assuredly follow. Then of what value is the charter to the Institute? We have always maintained that the Institute is, and should be, the representative body in the profession; but it simply cannot

maintain that position unless it absorbs into itself the young blood, which gives vitality and vigour to all institutions. Open the vein, drain away the blood, and a feeble and inert body is left. We feel confident that, if the Council will look the problem steadily in the face, the solution of it is not so difficult a matter.

Precisely in what way the change is to be made we shall not stop now to consider. The government authorities charged with the conduct of such matters will doubtless, if they are made aware of all the circumstances, be desirous of furthering the wishes of the Institute, if they can be assured that by so doing they further the aim and object of the profession, and thereby benefit public interests. Our sympathies are entirely with those who desire to maintain the date of incorporation, and to keep up the prestige that results from that; and if, happily, some plan may be devised whereby this is accomplished, the vote granted to Associates, and other reforms gained, we should rejoice. If, on the other hand, a fresh charter is necessary, let that be applied for. Even with a new charter the date of the original incorporation may be maintained on all the official documents of the Institute, and we do not see that it will lose one jot or tittle of its honour or dignity, but rather gain in both.

What use will the Associates make of their voting power when they get it? We can only surmise, but we imagine that in the election of the Council they will plump for those men who they think are most alive to the duties devolving upon them as the governing body. This will probably bring about more frequent changes at the Council body, and thereby an accession of energy, which, curbed by the more experienced at the table, will result in a prompter discharge of the duties imposed upon them. Members of the Council will be stirred to greater activity, greater decision and firmness will mark their actions, and the voice with which the Council then speaks will be less uncertain in its sound, because, cognisant of the views, hopes, and wishes of those outside the walls of the council-chamber, the tone will be firmer and more confident. Men respect strength and decision of character, and are more ready to forgive and condone an error of judgment resulting therefrom, than eminently respectable officialism, guarded at all points, and robbed of everything likely to give offence.

One thing to the observer's eye is clear: the Council has not now that influence which it ought to have, if it is to exercise any power at all. For this reason, and speaking in the best interests of the Institute, we desire to see this change in its constitution, feeling sure that great practical good will result. We should also hail with satisfaction the presence of two or more Associates on the Council, still further making it representative of the Society. The nomination and election of the President of the Architectural Association on the Council for the first time last year, and the wish expressed by Mr. CHRISTIAN in his address that that precedent might be repeated and become a custom, will be productive, we hope, of good. The Architectural Association contains the architects of the future, has been most useful to the profession, and is an ever-increasing body; it was therefore a wise and politic step to give its chief officer a seat on the Council of the Institute, and the Institute should do all in its power to cultivate a feeling of unity, and aid the younger Society by all legitimate means. Another result which may be expected to follow an extension of the franchise will be a larger attendance at the ordinary and business meetings. If the Associates have the vote, they will be more anxious and eager to speak and take part in the discussions, knowing that when questions have to be settled they will have a voice in the matter; and we do not think any alarm need be felt as to how that voice will be expressed. It has been too often the habit in past times to snub young men when they got up to express their views, with the usual, but unfortunate, result that bitterness was engendered and the speaker discouraged. Anything that will give life and vigour to the meetings would be a great gain, an improvement on the present dulness, too often visible. In conclusion, we hope that the Council will be prompt in their action in dealing with the memorial, and not let the grass grow under their feet. Their action and decision are being, we doubt not, watched with great interest.



## TOWN VERSUS COUNTRY.

IN the genial address which was delivered by the President of the Royal Academy at Canterbury there are many things which merit consideration, but we have now to deal with only one of them. It is well known that people in the provinces occasionally feel that they are at a disadvantage when compared with the inhabitants of the metropolis, and a student of an art school in a small town might be excused for having more or less despondency about his future if he stuck to art. In a manufacturing town there are always openings, but in a staid cathedral city like Canterbury or Lincoln, people who will buy designs or paintings are necessarily rare, and those encouraging stories of good fortune which are incentives to exertion cannot be heard every day in the classes. It was, therefore, both wise and kind on Sir FREDERICK LEIGHTON'S part to recall the names of Old CROME and JOHN SELL COTMAN, who also belonged to a cathedral city, and to tell the Canterbury students that "most of our greatest artists come to us from the purer air of the provinces." This is an interesting fact which is worth consideration.

In the first place, it may be remarked that in all kinds of businesses, trades, professions, as well as among artists, the majority of those engaged are not natives of London. Physiologists say that families in the metropolis do not endure, and, if it were not for the continual additions from other parts of Great Britain and elsewhere, the city would lose its position. This is especially seen in the arts. Take any society, from the Royal Academy to the Architectural Association, and it will be found that members who have a claim to be called cockneys are in a minority. Provincial architects are rather disposed to imagine that their London brethren assume airs and look down on the practice in country towns. But where are the native London architects? In a profession which counts so many members, there must be a goodly number who come under that class, but we maintain the great body of architects in the metropolis is made up of men from the provinces, Scotland, and Ireland. In painting and sculpture there is a much less proportion of London men.

This is no new phenomenon. Take, for example, the Royal Academy at the time of its foundation, which is as good a test as can be applied. The President came from Plympton, and among the thirty-three names appearing in the catalogue of the first exhibition, in 1769, we can only find six which can, with certainty, be said to belong to London members. The remainder is made up of provincial, Irish, and foreign artists. The proportions may have varied, but the metropolis was always in a minority. It is also worth noting that not one of the presidents has been a native of London.

Some parts of England are apparently more fruitful of artists than other parts. Devonshire is a remarkable example. REYNOLDS was a Plympton man, EASTLAKE, NORTHCOTE, and HAYDON, were fellow-townsmen from Plymouth. HAYMAN, the painter, and STEPHENS, the sculptor, belonged to Exeter. Many other names could be cited, and would appear to bear out the theory that pure air and beautiful scenery have much to do with the making of an artist.

In the same way the marvellous success of Scotsmen in art might be explained. If among the foundation members of the Academy they are not to be found, they were not long before they secured recognition; and it is not improbable that in a few years the majority of the members will be from beyond the Tweed. There never was a Devonshire school, and the Norwich school was, after all, but limited; but the strongly characterised personality of the northern works, of which Sir FREDERICK LEIGHTON spoke is certain to have an extensive influence. The only danger is that, owing to the attraction exercised by London, the artists may be induced to emigrate southwards before they have matured their style, and that those who remain in Edinburgh or Glasgow will be powerless to retain the characteristics which are necessary to give distinction to a school.

It is undoubtedly a great advantage for the northern painter to find so much beauty in the scenery and so many vigorous forms wherever he may turn. He has mountains,

foaming torrents, calm lochs, pastoral scenery of the softest kind, and if he has a turn for history or legends the literature of the country affords him an abundant supply. It is no wonder that foreign artists, in spite of the disadvantages under which they labour, have been fascinated by Scotland. An island like Arran affords subjects for years; and it might be said that a student who confined himself to the Castle Rock of Edinburgh would find a new subject every day in the variation of colour, the play of light and shade, which almost endow it with life. But brown heath and shaggy wood, mountains and floods, would be useless without energy, is seen from a comparison between Scotland and Ireland.

The scenery in Ireland is no less remarkable than that of Scotland. It would be difficult to discover anything in North Britain which will compare with the cliffs of Donegal and Clare; the mountains of Galway and Kerry have as much stern grandeur as is to be found in any part of Europe. Such coast scenery as is seen at Glengariff, the Killarneys, Clew Bay, Carlingford, in another country would attract admiring crowds. The Munster Blackwater surprises every stranger with its beauty, and excursionists and guides cannot deprive Killarney of its charms. Dreary and monotonous as the bogs appear at first sight, Mr. WHISTLER could in any of them find materials in the course of a day for symphonies in brown and gold that would afford a refreshing novelty to the jaded eyes of Bond Street loungers, and out of the desolation that is found at Clonmacnoise on the Shannon, a river scene could be produced that would surpass everything that is to be derived from Battersea or Bermondsey. Within less than an hour's journey on every side of Dublin picturesque scenes are to be found. But although nature has been so liberal in affording delight for the eye in Ireland, it is astonishing how few landscape painters have been derived from the island. In the last century GEORGE BARRET obtained so much applause in London for a couple of landscapes he brought over from Dublin that his head was nearly turned. His countryman, DANBY, at a later time could not complain of want of patronage, although he might be supposed to be too imaginative to suit English taste. Irish landscape-painting in England is represented by those two artists, unless we include the vigorous sea-pieces of Mr. EDWIN HAYES in that class of work. From time to time a few men have appeared, but they were wanting in perseverance, and failed to make their mark.

The Irish figure-painters have been more numerous. BARRY's success might have convinced his countrymen that there was a field for them in England. About ten years after BARRY's death, WILLIAM MULREADY, who belonged to the little town of Ennis, in Clare, was elected an Academician. In 1830 a third Irishman, MARTIN ARCHER SHEE, from Dublin, who, like BARRY, was a protégé of EDMUND BURKE, rose to the presidency of the Academy. In this case the honour was probably due to SHEE's social and oratorical gifts rather than to his skill in portrait-painting. DANIEL MACLISE, a Cork man, who was elected in 1840, might also have worn the president's red gown if he cared for the honour. ELMORE, from the more remote Clonakilty, was another representative of his country among Academicians. If water-colour art were recognisable there, the Irish Director of the National Gallery would be entitled to a like position. FOLEY and MACDOWELL and LAWLOR gained reputation as sculptors. JOHN HOGAN, another Irishman, was one of the few British members of the Pantheon in Rome, but his works are almost unknown in England.

When we consider the history of art in England, it is difficult to avoid drawing the conclusion that at one time the provincial spirit, which is so efficacious in giving vitality to painting and sculpture, was likely to have been derived from Ireland. The Irish painters and sculptors gained a footing in England before the Scotsmen, but they failed to keep it; and not only is the Royal Academy at the present time without an Irish member, but among the artists who are likely to be candidates, there is not one Irishman. Do the Irish painters ever think of this?

London cannot compete with the rest of Great Britain as a birthplace of artists, but its "roll of fame" contains names of which any city or country might be proud. Genius is full of freaks, and has an odd way of appearing in places where it is least expected, and thus MALLORD



TURNER, one of the greatest of landscape painters, comes out of a barber's shop in the narrow Maiden Lane; the visionary BLAKE cultivated his fine fancies in a hosier's shop near Golden Square; and WILLIAM HUNT, who knew more about flowers and country boys than any man of his time, was brought up amidst the constant hammering of a tinsmith's shop in Long Acre. HOGARTH was also a Londoner, and the future realist began with engraving heraldic animals, somewhere near Leicester Square. CHARLES LESLIE, LEECH, CRUIKSHANK, three humourists whose names may worthily be placed alongside HOGARTH'S, can also be claimed by London. Then there are INIGO JONES, EDWIN LANDSEER, the two BACONS, and BANKS, the sculptors; COCKERELL, ELMES, JAMES WARD, the animal painter; WILLIAM COLLINS, Sir A. W. CALLCOTT, and many other men whose reputation is likely to endure. But it must be said that London, in proportion to the number of its inhabitants, does produce rather few artists. Whether this arises from the opportunities which exist of dispelling all romance about the artist's life, or from more profitable employments awaiting the inhabitants, or from seeing too many pictures, has yet to be determined by those members of the Statistical Society who can so readily solve the most difficult problems by the aid of arithmetic.

It is remarkable that in France we also see how much art owes to provincial recruits. Among the painters MEISSONIER comes from Lyons, so does PUVIS DE CHAVANNES, GÉROME comes from Vesoul, near the eastern boundary of the country, PAUL BAUDRY from Roche-sur-Yon, HENNER from Alsace, CABANEL from Montpellier, BONNAT from Bayonne, J. P. LAURENS from Fourguevaux, BOUGUEREAU from La Rochelle, CAROLUS DURAN from Lille, HEBERT from Grenoble. The sculptors who are most widely known, such as MM. CHAPU, GUILLAUME, FALGUIÈRE, CARRIER-BELLEUSE, CRAUK, PAUL DUBOIS, are provincial men. The architects, on the other hand, who have gained the highest distinction are generally Parisians. MM. GARNIER, VAUDREMER, BALLU, ANDRÉ, BAILLY, QUESTEL, ABADIE, who have attained the dignity of chairs at the Institute, are all natives of Paris. Why there should be so remarkable a difference between architecture and its sister arts may be explained by the influence which is exercised on the mind by early associations. There are splendid buildings all over France, but the sight of one or two cathedrals or churches in a town is not so impressive to the imagination of the young as the public and private buildings of a city like Paris.

### THE ARCHITECTURAL ASSOCIATION.

THE eighth ordinary meeting of the Association was held on Friday evening, the 30th ult., Mr. H. W. Pratt, vice-president, in the chair. A vote of thanks was passed to Mr. Harris in connection with the visit to St. Marylebone parish church.

Mr. W. H. ATKIN BERRY, hon. secretary, said that some tickets had been placed at their disposal by the Carpenters' Company for a course of free lectures to be given at Carpenters' Hall, the first of the series to be delivered by Professor Kerr on the evening of the 11th inst.

The next meeting of the Association, it was pointed out, would take place on the 6th inst.

The business set down for the evening was the discussion of a paper, read by Professor Kerr at the Conference of Architects last year, under the title of

#### English Architecture Thirty Years Hence.

Professor KERR offered some preliminary remarks. He explained that he had no wish to interfere with perfect freedom of debate; but as some of the criticisms passed on his paper seemed to have missed the mark intended by him, he would tell them how the paper came to be written and to be read, more especially as some of his critics had spoken as if he had come forward presumptuously to make prognostications of the future, but had not done so. The Conference Committee had thought it well to discuss the immediate future of the profession, and had asked him to undertake to read a paper on the subject. In the journal in which he had the privilege to write, he had taken a peculiar view of architecture. He had altogether discountenanced the idea that we had been baffled in any points. He contended that we were advancing now by some minor arts on a certain course, and he saw no reason to doubt that in the next or the following generation England would take the lead

in the world. His doctrine involved the assertion of the abandonment of the academicalism of the arts and the recognition of freedom of thought, and what might be called universalism in art; perfect liberty and equality in all the arts; generosity of all artists towards each other, &c., and on the basis of this he contended that England was now assuming an honourable position which it was desirable to understand, and which it was to the advantage of art to speculate on. Mr. Kerr then looked at England as compared with other European nations, and, pointing out the differences of national characteristics, said it might safely be acknowledged that the English were not a sentimental race; they preferred practical views in everything, and they preferred to see a substantial outcome rather than anything that might be called visionary or transcendental.

During the last thirty or thirty-five years a remarkable change had come over the mind of the country with regard to art, and compared with the sluggish intelligence of the period before the Exhibition of '51, the state of things at present as to the arts universally was as different as one thing could be different from another on the same ground. In the domain of art, English intelligence was now acquiring a national purpose peculiar to itself, one which was specially identified with the broad basis on which English operations were universally performed, and which was summed up in the phrase that England is the workshop of the world. This pointed to industrial art in its widest sense, and he contended that industrial art would and must develop into art of altogether a different kind from anything which had hitherto been accepted in Europe, either in ancient or modern times; and it was in this respect that he expected England to take the lead. The Professor next spoke of what used to be called the sacred circle of the academical arts, and showed how the principle of academicalism and exclusiveness had been losing favour and had become gradually undermined—circumstances under which architecture had in the last fifty years come in a remarkable way to the front, and, as the minor arts rose into a position of public recognition, they had formed a cluster or galaxy of art around it. Mr. Kerr spoke of the peculiar position occupied by architecture as an art, because it combined as no other profession did three elements which were seldom found combined at all—art, meaning artistic design; science, meaning the mathematical contrivance of construction; and, lastly, commerce. The question dictated to him by the Conference Committee was, "What was coming?" There was one way of discerning what was coming. To take a leap, we should go backward and then take a run forward, and the force of the momentum carried us forward in the one direction towards which we tended. To find out, then, what the progress of art would be, it would be best to go back so as to get a run forward, keeping steadily on the course that public taste was taking, and having acquired a momentum, let it carry you on as it would. For this precise purpose he had adopted the principle of retrospection and not of foresight. Persons were apt to consider what ought to be coming, and this was a matter of opinion only rather than what was coming, which was a matter of fact. What would be was matter of calm and dispassionate calculation based on sufficient data and sufficient means; or, to put it in another way, they might inquire what was the general direction public taste was now taking, and what might they, as young men, gather for their own profit out of a studious contemplation of the course which had been pursued for so many years as regarded its being pursued for so many years to come? The modern European style of architecture was an expression of his own that he had used for some years. It must be perfectly plain, when you considered what modern Europe was, that the idea of modern Europe existing without its own modern style of architecture was impossible. Modern Europe had its rise in the fifteenth century. The modern style rose at the same time. It had pursued a certain characteristic course ever since, and with its examples, good or bad, it had been continuous. Whatever its merits or demerits, it could not be denied that Classic was the modern European style, and in this we had a basis on which to stand. Turning to another remarkable incident without entering on to the question of its merits, Professor Kerr said it was enough to understand that, regarding the Gothic revival as an episode in the history of English architecture, it introduced into the modern architectural mind, especially in this country, the element of vigour. It was said that the modern European style, pure and simple, had become effete, that it lacked masculinity, vigour, &c., while Gothic was characterised by vigour, truthfulness, determination to turn neither to the right nor to the left.

Next there was the incident of the Exhibition of '51. Some people were accustomed to sneer at the Exhibition and all that it brought forth. The sneer was a vain and a futile one. No enterprise in the whole history of art had ever produced in so short a time what that enterprise produced in England. It brought immediately into prominence the universality of the minor arts or industrial art, a word more expressive than the mere term "minor arts," which indicated only the subserviency



of those arts not included in the academical régime. Mr. Kerr recounted the changes effected, among others, as to liberty, freedom, criticism, &c., and the rise of popular art in England, which every day became more and more pronounced, and from all this he contended that the future of England lay along a path of great distinction; and, having completed his arguments, he deduced that, as a matter of fact, the Italian must be accepted as the style of the present age, and pointed to this style in conjunction with the two main elements or leading features of Classic and Gothic, namely, the grace of the former and the vigour of the latter as what was coming.

The CHAIRMAN said that Professor Kerr had laid great stress on what he termed the modern European style, but had not, he thought, given sufficient importance to the Gothic revival, for in passing criticism on it he had called it a mere episode in the history of English architecture. Now, the revival was surely to be regarded as something more than that. Would a mere episode have taken so deep a root in the country as it had done, and still continued to hold? It could not be considered a thing of the past, either now or during the next thirty years. No doubt it was influenced and carried on by the ecclesiastical branch of architecture. It had influenced civil and domestic architecture; but in these branches its life had been short, or at any rate it had not been taken up to the same extent. But it would be a long time before ecclesiastical architecture changed from the Gothic to the modern European style, or any other style. It was true that free Classic had been taken as a model or style which might be developed in church architecture, but that it would take any prominent part in this direction during the next thirty years he did not believe. Love of Gothic was so deeply rooted in the hearts not only of architects, but of the people of this country, that it would die hard. He thought the tendency of the day was to develop the later phases of Gothic. Now that speculative builders and quack architects were beginning to parody this free Classic, we should have to turn to some other style. The architecture of the next thirty years would depend probably on the influence of leading architects. In the past few years we had lost all our leading Gothic men, and consequently there was a dearth of leaders to guide us in this direction. Mr. Norman Shaw was still with us; in any other style than that in which he now worked he would have very many followers, as indeed he always had.

Mr. A. B. PITE said they did not seem out of the wood yet. What sort of work would they do, after this further consideration of "Architecture Thirty Years Hence?" Would it be anything different from what they had hitherto had? They would break up that evening with the question unanswered. Professor Kerr had very ably and brilliantly drawn their minds back to the rise of the Italian Renaissance. He had told them they must run backwards and then run forwards, and then take a jump and see where they got to. If they had lived a hundred years or fifty years ago, would any number of runs forward and jumps have brought them into the present state in which Queen Anne had plunged them? He did not think architecture went forward exactly in jumps. We seemed to be entirely at the disposal of geniuses. There was no reason for the rise of the Italian Renaissance except for Michel Angelo, Bramante, &c.; for the Gothic revival except for Ruskin and others; and there was no other reason for Queen Anne except for the existence of Mr. Norman Shaw. Art seemed entirely at the mercy of a few men. Architects of the nineteenth century lived in an age of architectural springs or founts. One revival had followed on another, and we were now in the throes of a nine years' wonder in the shape of Queen Anne. Architects of the nineteenth century would be looked on as a most eccentric set. The century would be put down as one of power, though the architecture of Queen Victoria Street and Moorgate Street, which the Professor considered the style of the future, would not be owned by architects as a profession. Mr. Pite moved that their most cordial thanks should be given to the Professor for his kindness in addressing them.

Mr. BLAGROVE, who seconded the vote, said he thought the style of the future would be eclectic. He called to mind that Professor Kerr had before then proved a true prophet, and had discerned the signs of coming change long before even Mr. Street.

Mr. BLASHILL said that he had proposed to the Conference Committee that it would be well to have a paper on the future of English architecture. As none of them felt qualified to deal with the subject, they had asked Professor Kerr to do so. He attributed the rise of the Italian Renaissance to be due to the great impulse given to study of pagan art, literature, &c., at that time. He was not prepared to say that anything like the pure Italian style alluded to by Professor Kerr would take the place of everything. There must necessarily be a best style, and it was for the young architects to find it out.

Mr. HOOPER thanked Professor Kerr for the encouraging view he had held out to them. Signs of progress in art there were, indeed, even in the humblest matters. The Renaissance, he believed, had its rise among the educated classes, as also the Gothic revival had.

Mr. H. D. APPLETON pointed out the improvement in architectural criticism among laymen.

Mr. W. H. WOOD thought they had not gone back far enough. Every one in ancient Greece was an artist, or understood art; so it was impossible for an artist to do bad work. The Romans sought out good artists, and employed them. Religious fervour was the ruling influence in Mediæval times, and also underlaid the Gothic revival. In the past few years, on the contrary, scepticism had arisen.

Mr. T. ELLISON said Professor Kerr had preached a funeral sermon over Gothic, and Mr. Pite on Classic. They must, however, at least own that the ghosts of both still walked the land.

Mr. JOHNSTON thought there was too much restlessness nowadays. Architecture would be all the better if sober judgment and careful attention guided architects in their studies and in their actual works.

The vote of thanks was then carried by acclamation.

Professor KERR thanked the members, and the meeting adjourned.

## BRITISH SCHOOL OF ARCHÆOLOGY AT ATHENS.

A MEETING of the promoters of the proposed British School of Archæology in Athens was held on Monday in Albemarle Street. The Bishop of Durham presided. The report stated that the committee had accepted from the Greek Government a piece of ground at Athens containing nearly two acres, for the proposed British school. It was in the immediate vicinity of Athens, on the southern slope of Mount Lycabettus, west of the Monastery of Asomatos, and was valued at about 2,700*l.* The upper part commanded a view of Mount Hymettus in front, while the Bay of Phaleron and the Island of Ægina were visible to the right. The funds were estimated at about 4,000*l.* This sum would suffice to build a house containing accommodation for a resident director, and affording one good-sized room to serve as the library of the school. Besides building such a house, the sum of 4,000*l.* would also, it was believed, suffice to provide a library of reference for the school, or at any rate the nucleus of such a library.

The Chairman, in moving the adoption of the report, said his own studies led him across some question of Classical archæology almost from day to day. When he wanted his difficulties solved he had to go, not to any English source, but to some monograph in German, French, or sometimes in Italian. It was very rarely that he could find what he required in English. That was a state of things with which we ought not to be content. It was a great satisfaction to know that the Universities were taking up the study of archæology, making it part of their examination system, and so endeavouring to promote its spread. But what we wanted was to connect ourselves directly with the heart of Hellenic culture so that its very lifeblood might flow through our veins, and this we should gain by the establishment of the school at Athens.

Mr. C. T. Newton moved a resolution to the effect that the first aim of the school should be to promote the study of Greek archæology in all its departments. Among these should be the study of Greek art and architecture in their remains of every period, the study of inscriptions, the exploration of ancient sites, and the tracing of ancient roads and routes of traffic; that it should be a school of classical studies, and that the director should afford information and advice to all properly-accredited British travellers in Greece who might apply to him. In describing what had been done by other nations, Mr. Newton said there was room for inquirers in Greece. A single ancient city would take years to explore thoroughly. It would be a regret to him for the rest of his life that he had been called away from Cnidus after considerable exploration, but without having explored a tenth part of the city. At Halicarnassus, again, he had made what he might call a house-to-house visitation to see where there might be any inscriptions, and yet since he had left inscriptions of the highest value had been discovered. Besides these cities, there were others, of which "Vidi tantum" was the only entry in the traveller's note-book.

Professor Jebb, in proposing that a part of the funds subscribed should be expended in erecting a suitable building, stated that the executive committee had had the good fortune to receive the aid of Mr. Penrose, than whom no one could more appropriately design a home for a British School at Athens.

Mr. Penrose exhibited the plans for the proposed house, and explained that it would be possible to make a lateral extension afterwards, if it should be found necessary. He thought that the building itself, without any extension at present, could be built for 3,000*l.*

It was finally resolved—"That a formal appeal in aid of the school be made to the Universities, the Royal Society, the Society of Antiquaries, the Hellenic Society, the Royal Academy, the Institute of British Architects, and other public bodies."



## THE ARTISTS' CORPS.

THE annual meeting and distribution of prizes of the 20th Middlesex Rifles was held on Saturday evening at the Criterion, Piccadilly. There was a large gathering of the friends and members of the regiment. Lieutenant-Colonel Edis, commanding, who was supported by Sir Frederick Leighton, P.R.A., honorary colonel, and most of the officers, gave a brief *résumé* of the work done during the past year, and in congratulating the regiment on its general efficiency and on the great improvement shown in shooting, urged increased efforts. They had 732 efficient out of a total enrolled strength of 743, or a percentage of 98.5, and the improvement in musketry practice was shown in the fact that the marksmen had increased from 133 to 155. Now that the Martini-Henry rifle had been issued to the regiment he hoped that much better results would be obtained, and that the year on which they had now entered would produce a still larger increase of marksmen and first-class shots. Colonel Edis was glad to say that the regiment was generally in a very efficient state, that the finances were satisfactory, and that the musters at all the important parades had been good. With reference to the work of this year, first of all they would attend the manœuvres at Brighton. They might not all like Brighton for the work, but, as the review was fixed to be held there by the Field-Marshal Commanding-in-Chief, it was their duty to support His Royal Highness's views, and he hoped he would see 500 men on parade on Good Friday morning. He hoped also to take the whole battalion to Aldershot for a week's training with the Regular troops, as he believed that the experience to be gained there was of the first importance to all Volunteer regiments, as teaching them the duties and discipline of camp life. In conclusion, Colonel Edis said that as the political horizon was clouded it behoved them as volunteers to do their utmost to promote real efficiency. The prizes were then distributed by Sir Frederick Leighton, the principal winners being as follows:—Hartley Challenge Cup and Jewel, Private Willett; Marksmen's series, Sergeant J. Phillips, Private Willett, Sergeant Bigsby, and Private Hawkes: field firing, Private Ingles, Sergeant Williams, and Privates Dove and Billson; judging distance, Private Thompson; battalion marksman, Private Wells, &c. At the close of the distribution, in response to a vote of thanks, Sir Frederick Leighton expressed the pleasure he felt in coming among his old comrades, and remarking upon the excellent report furnished by Colonel Edis, said it was particularly gratifying, as these were days when Englishmen could not afford to neglect their duty. Afterwards the regiment dined together to the number of about 300. Colonel Edis, who was in the chair, was supported by a large and distinguished number of guests.

## TESSERÆ.

## Skill in Colour.

C. R. LESLIE, R.A.

IT is a fatal error to believe that colour is a matter of more easy acquirement than form; I conceive it to be far more difficult. Form may be measured; its anatomical structure may be investigated; its lines are not changed, as tints perpetually are, by the shifting light of day or the accidents of reflexes. If the beauties of form are subtle, those of colour are evanescent; and, combined with *chiaro-oscuro*, from which, in nature, they are inseparable, they become the last refinements of the art, as it addresses itself to the eye. It must be remembered that at the present day there are greater obstacles in the way of becoming colourists than existed in the infancy of painting. The discovery of *chiaro-oscuro* has much increased the difficulties of colouring; and, unfortunately, ever since the time of Raphael indolence in a study so difficult has been able to shelter itself under the example of him who was indolent in nothing that belonged to the art.

## Origin of Caryatids.

CHEVALIER E. Q. VISCONTI.

Vitruvius informs us that, after the victories obtained by the Greeks over the Persians, it became the custom to employ in some buildings, as supports or columns, statues representing either prisoners taken from the conquered nation, or the captive wives of the inhabitants of such Grecian cities as had been unfaithful to the cause of their nation. Carya, in Arcadia, was among the cities that had betrayed the Greeks; and, according to Vitruvius, it is from the name of the Caryatic women, whose statues were employed in architecture, that the technical name of this kind of support has been borrowed. The well-informed Athenians, whose remarks are engraved in an inscription, have very properly denominated the caryatids of the Temple of Pandrosos *Koras* (girls or damsels), for, in fact, they represent not captives but Athenian virgins, bearing

on their heads the sacred vases for the ceremonies of the sacrifice. Lessing believes that the tradition of Vitruvius is a fable, and that the caryatids were only Lacedæmonian virgins, who celebrated at Carya, in Laconia, the festival of Diana. The statues of Lacedæmonian virgins may very possibly have been employed as columns, in the same manner as the statues of the virgins at Attica have been in the temple of Pandrosos. In truth, no ancient caryatid with which I am acquainted represents a captive. But as the figures of Persian prisoners supported at Sparta the roof of a portico (see Pausanias, book 3, chap. ii.; Vitruvius, book 1, chap. i.), it is not wholly improbable that figures of captive women may have been employed in a similar manner in some of the Grecian edifices.

## Size in Architecture.

SIR M. D. WYATT.

The intellectual banquet falls upon senses dulled by fatigue, and, if enjoyment fails, the most nourishing mental food ceases to assimilate. The human eye can really take in, with what the great Italian architects were wont to study with much care, the "colpo d'occhio," but a limited dimension; and beyond such dimensions no increase of enjoyment can be derived from additional scale or extent of structure.

## Titian as a Colourist.

SIR DAVID WILKIE, R.A.

After seeing all the fine pictures in France, Italy, and Germany, one must come to this conclusion, that colour, if not the first, is at least an essential quality in painting. It is richness and depth alone that can do justice to the material. Upon this subject every prejudice with which I left home is, if anything, not only confirmed but increased. What Sir Joshua Reynolds wrote, and what our friend, Sir George Beaumont, so often supported, was right; and after seeing what I have seen, I am not now to be talked out of it. With us, as you know, every young exhibitor, with pink, white, and blue, thinks himself a colourist like Titian, than whom, perhaps, no painter is more misrepresented and misunderstood. I saw in Florence his famous *Venus* upon an easel, with Kirkup and Wallis by me. This picture, so often copied, and every copy a fresh mistake, is what I expected it to be—deep, yet brilliant, indescribable in its hues, yet simple beyond example in its execution and colouring. Its flesh was a simple, sober, mixed-up tint, and apparently completed while wet. No scratchings, no hatchings, no scumblings, no multiplicity of repetitions, no ultramarine, lakes, nor vermilions, and not even a mark of the brush visible—all seems melted in the fat and glowing mass; solid, yet transparent, giving the nearest approach to life that the painter's art has yet reached. This picture is, perhaps, defective in its arrangement, but in painting quite admirable. Now, can nothing like this ever be done again? Is such toning really not to be reproduced? I wish to believe the talent exists, and assure the material exists. But we have now got another system; our criterion or judging is changed. We prefer something else, or, what is still more blinding, there is a something else that we mistake for it.

## Diameter of Public Clocks.

SIR EDMUND BECKETT.

I have no difficulty in saying that one-tenth of the height from the ground is the least size which a public dial ought to be, except in some unusual positions where they can only be seen a very little way.

## The Tie Beam.

SIR JOHN ROBISON.

The thrust which a roof exerts on the walls is the most hazardous of all. Our ordinary walls, instead of being able to resist any considerable strain pressing them outwards, require in general some ties to keep them on foot. When a person thinks of the thinness and height of the walls of even a strong house, he will be surprised that they are not blown down by any strong puff of wind. A wall 3 feet thick and 60 feet high could not withstand a wind blowing at the rate of 30 feet per second (in which case it acts with a force considerably exceeding two pounds in every square foot) if it were not stiffened by cross-walls, joists, and roof, which all help to tie the different parts of the building together. A carpenter is therefore exceedingly careful to avoid every horizontal thrust, or to oppose them by other forces. And this introduces another essential part into the construction of a roof, namely, the tie or beam, laid from wall to wall, binding the feet of the rafters together. This is the sole office of the beam, and it should be considered in no other light than as a string to prevent the roof from pushing out the walls. It is indeed used for carrying the ceiling of the apartments under it, and it is even made to support a flooring. But, considered as making part of a roof, it is merely a string, and the strain which it withstands tends to tear its parts asunder. It therefore acts with its whole absolute force, and a



very small scantling would suffice if we could contrive to fasten it firmly enough to the foot of the rafter. If it is of oak we may safely subject it to a strain of three tons for every square inch of its section. And fir will safely bear a strain of two tons for every square inch. But we are obliged to give the tie-beam much larger dimensions, that we may be able to connect it with the foot of the rafter by a mortise and tenon. Iron straps are also frequently added. By attending to this office of the tie-beam the judicious carpenter is directed to the proper form of the mortise and tenon, and of the strap.

#### Modernness of the Italian Style.

SAMUEL HUGGINS.

The Italian style may claim the preference over all others in virtue of its length of possession. I know not what may be the feelings of others on this point, but to me a modern Gothic building, however unique a combination of elements it may boast, always looks like a reproduction of a Mediæval one; while an Anglo-Italian example, though of so recent a date as the other, and without one original feature, has an air of genuine and entire modernness. Why is this? It is, I believe, because the style of the former work, discontinued ages ago, was only resumed within our own recollection, as because its original examples are amongst us to remind us of the gap between their date and that of the nineteenth century representatives; whereas the style of the latter, however it originated, was in operation centuries before our time, and its example of to-day is therefore, as it were, one of an apparently interminable series, coming down from the past and leading on to the future, to which it more significantly and eloquently appeals, and to which it has as much reference as to the past.

#### Michel Angelo and Raphael.

H. FUSELI, R.A.

Michel Angelo came to nature. Nature came to Raphael; he transmitted her features like a lucid glass, unstained, unmodified. We stand in awe before Michel Angelo and tremble at the height to which he elevates us. We embrace Raphael, and follow him wherever he leads us.

#### Early Flock Hangings.

CARL ROESNER.

It is generally allowed that flock hangings were first manufactured in England and invented by Jerome Lanyer, who obtained a patent in the reign of King Charles I., dated May 1, 1634, and carried on his art in London. In this patent it is stated "that by his endeavours he hath found out an art and mystery of affixing wool, silk, and other materials of divers colours upon cloth, silk, cotton, leather, and other substances, with oil, size, and other cements, to make them useful for hangings and other occasions which he calleth Londriniana, and that the said art is his own invention." Savary in his "Dictionary of Commerce," 1720, says that *tonture-de-laine* or flock hangings were first made at Rouen, but in a coarse manner, being only used for grounds, on which, with flocks of different kinds, were formed designs of brocades. A French author, writing in 1723, says that paper-hangings called tapestry, in paper, were only employed by the country people for their cottages, or by small tradesmen in their shops and rooms. In England the manufacture continued from the time of Lanyer, and obtained a high reputation. In 1712 a duty of 13s. 4d. per square yard was imposed, and a Mr. Jackson, who established a factory at Battersea for paper-hangings of Classic design on chiaro-oscuro, writes, in a work published in 1754, in praise of his own productions, and condemns the fanciful paper-hangings at that time so much used, comparing them with the Chinese. In the year 1786 there was established at Chelsea a manufactory for paper-hangings of a very superior description, by George and Frederick Echarlts. They printed not only on paper, but also on silk and linen, and employed a number of artists in addition to workmen and children.

#### Lightning Conductors.

E. HIGHTON.

Where a building has any quantity of vertical metallic work, it is quite necessary, for its protection against lightning, that it should have an artificial lightning conductor, unless the materials of themselves form a natural one. (2) It is very desirable that all metallic circuits, especially those in a vertical direction, should be metallically connected with the system of lightning conductors. (3) In many instances a single insulated lightning conductor attached to a building may become positively injurious and dangerous, as it may cause many a cloud to discharge its electric force at that point which would otherwise have passed over and poured its terrific power into some other channel. (4) Where lightning conductors are employed they ought to be thoroughly well erected, and every course or channel that the electric fluid has open to it carefully considered, and a

division of the charge in those quarters provided against. (5) A lightning conductor, or a system of lightning conductors, where properly and scientifically erected, are perfect safeguards against the effects of heavy discharges of atmospheric electricity; but if improperly applied they may become a most dangerous addition to a building. (6) It is essentially necessary for the safety of the public that all public buildings, and especially churches, should, if naturally deficient in safe and secure lightning conduction, have artificial lightning conductors erected for their protection. That all and every town, building and vessel in the world can be most securely protected from the effects of lightning, however severe, I have not the shadow of a doubt; but, knowing from experience the terrific power of lightning, I must still assert that, as a person may be poisoned by an improper application of medicines, so may a building be destroyed, or even human life sacrificed, by an improperly or injuriously erected lightning conductor.

#### Bond in Masonry.

PROFESSOR RANKINE.

The strongest bond in ashlar masonry is that in which each course at the face of the building contains a header and a stretcher alternately, the outer end of each header resting on the middle of a stretcher of the course below, so that rather more than one-third of the area of the face consists of ends of headers. This proportion may be deviated from when circumstances require it; but in every case it is advisable that the ends of headers should not form less than one-fourth of the whole area of the face of the building.

### MANCHESTER ARCHITECTURAL ASSOCIATION.

AT a meeting held at the Old Town Hall, February 3, Mr. J. Spencer Hodgson in the chair, Mr. T. L. Worthington read a paper on "Aspects of Old Manchester," illustrated by drawings, sketches, and engravings. Having described the extent and aspects of Manchester during the British, Roman, and Saxon rules, he depicted and commented upon the appearance and progress of the town during the eleventh, twelfth, thirteenth, fourteenth, fifteenth, and sixteenth centuries, and gave a history of the cathedral church and Cheetham College. Speaking of Manchester in the seventeenth century, he described the few remnants of the old half-timbered houses of that time.

A discussion followed, in which Messrs. Chadwick, Hodgson, Mee, Harrison, and Woodhouse took part.

### MASTER BUILDERS' ASSOCIATION.

THE National Association of Master Builders of Great Britain held its half-yearly meeting on Wednesday, January 28, at the Saracen's Head Hotel, Lincoln, and local associations from London, Manchester and Salford, Liverpool, Birmingham, Bristol, Bradford, Hull, Lancaster, Doncaster, Bolton, Walsall, Northampton, Lincoln, Warrington, Ashton-under-Lyne, and Stalybridge, were represented.

The report and accounts for the past half-year were read and adopted. Mr. W. H. Cowlin, of Bristol, was elected president; Mr. R. Neill, junr., of Manchester, and Mr. J. H. Colls, of London, were elected vice-presidents; Mr. Stanley G. Bird, of London, was elected hon. vice-president; Mr. J. C. White was re-elected treasurer; and Mr. Joseph Stevenson Jones, of Liverpool, was elected hon. auditor, and representatives of the local associations of Birmingham, Bolton, Bradford, Edinburgh, Huddersfield, Hull, Lancaster, Leeds, Lincoln, Liverpool, London, Manchester and Salford, Northampton, Nottingham, St. Helens, Wigan, and Wolverhampton.

The Chairman explained the various clauses in the form of contract suggested by the special committee, to be laid before the committee of the Royal Institute of British Architects, and it was resolved to leave the matter in the hands of the special committee appointed.

The Secretary was instructed to obtain statistics from the members of the local association, as to the fires they have had upon their premises and buildings in course of erection, and what damage has been done during the last five years.

It was resolved that the best thanks of the Association be embodied in an illuminated address, and presented to Mr. S. G. Bird for his valuable services as president during the last four years.

The Association decided to hold its next half-yearly meeting at Bristol.

Messrs. Healey, of Bradford, have prepared plans for the restoration of Bradford parish church.



## NOTES AND COMMENTS.

THE Royal Gold Medal of the Royal Institute of British Architects is to be awarded to Dr. SCHLIEMANN, and the honour has been fairly won. We have endeavoured to point out the errors into which the explorer fell through want of archaeological knowledge, and from allowing his enthusiasm to control his judgment. But we have always tried to do justice to the fervour and self-sacrifice of Dr. SCHLIEMANN. His life is one of the romances of the century. That a youth of the humblest class should be inspired with the idea of discovering Troy, that by perseverance he was able to amass sufficient wealth to enable him to carry out his intentions, and that finally he should have discovered prehistoric settlements in a remote part of Greece, are circumstances which do much to redeem the prosaic character of our time. The treasures which were found have been generously given to his countrymen, and Dr. SCHLIEMANN has had no other reward than fame and the gratification of his aspirations. If he could be persuaded to turn his attention to the discovery of the remains of temples, instead of rude dwellings, he would make architects his debtors.

EVERY visitor to Rouen cannot fail to remember the suspension bridge over the Seine. Like most structures of the kind, it was a pleasing work, owing to the curves of the chains, and was generally introduced into views of the city by English artists. The bridge has disappeared. It was erected in 1836 from the designs of the Brothers SEGUIN, at a cost of 750,000 francs, and, according to the terms of the concession, was to become public property at the end of ninety-nine years. But in one-half that term the bridge (which was only about 20 feet in width) was found to be too narrow to accommodate the trade of Rouen, and it was considered advisable to purchase the proprietary rights, and to replace the bridge by one in stone. The change will involve many alterations in the old Rue Grand-Pont, leading from the bridge to the cathedral. The Rouen suspension bridge would appear to have been formed on a similar principle to that of the Hammersmith Bridge, and both have been fated to disappear about the same time.

THE past year has been the most successful in the history of the Edinburgh Sanitary Protection Association. The number of members at the present time is over 800. Of these about 700 are resident in the town and neighbourhood of Edinburgh, the remainder being country members. About 1,200 inspections have been made during the year, and every member has had the opportunity offered him of having his house inspected since January 1, 1884. The income during the past twelve months has been 1,493*l.* 1*s.* 9*d.*; expenditure, 1,215*l.* 8*s.* 5*d.*; balance, 277*l.* 13*s.* 4*d.*; making, with the balance from last year, a total of 617*l.* 13*s.* 3*d.* A curious case has happened, which may be taken as a precedent. One of the members, having taken a yearly lease of a house in the country from Whit Sunday last, applied in June for an inspection of its drainage and water-supply system. The proprietor, being dissatisfied with the terms of the Association's report, brought an action in the Sheriff Court against the engineer who wrote the report and the council of the Association, seeking for damages in 500*l.* Both the Sheriff-Substitute, before whom the case was first tried, and the Sheriff, to whom it was appealed, gave judgment, with costs, in favour of the Association.

HUNGARY has, by the sudden death of ADOLPHE HUSZAR, lost a sculptor who seemed destined to increase the fame of his country in art. He had hardly reached his fortieth year. HUSZAR belonged to a very poor Slovak family, and from his boyhood he was compelled to depend on the labour of his hands for sustenance. In his seventeenth year he entered PASSER's atelier as a hewer, and there he was filled with a passionate desire to become a sculptor. By studying at night he was able to produce models which gained him assistance from the Government in order that he might pursue his studies. In 1870 he was successful in the competition for the statue of the poet EOETVOES, and it was followed by memorials of other

Hungarian celebrities. His last work was the memorial of the patriot FRANCIS DEAK, which was completed about a month before the sculptor's death. HUSZAR's form was herculean, and he was of a robust constitution.

THE question of ownership of gas and water works was considered by the President of the Society of Engineers in his address on Monday. It was contended that it is doubtful whether any advantage arises from the ownership being undertaken by local authorities. Water being a necessary of life, there is, perhaps, less to be argued against its being so supplied; but in the case of gas it was thought there was no more reason for the supply being in the hands of local authorities than for such bodies to acquire railways, or to undertake the exclusive supply of bread or meat. In describing the experiments for smoke abatement, it was explained that other evils besides those arising from visible impurities of the air are to be found in the London atmosphere.

A STATUE of NICÉPHORE NIEPCE, who, in 1814, invented permanent photography, or, as he called the process, heliography, will be set up in Chalon-sur-Saône in May next. He found that by coating a piece of plated silver or glass with a coating of prepared asphaltum varnish, and exposing it in a camera obscura for about six hours, an image could be developed. Greater sensibility was obtained by DAGUERRE. Afterwards the two chemists entered into partnership, and on the death of NIEPCE, in 1833, his son ISIDORE took his place. The French Government guaranteed a pension for life of 6,000 frs. to DAGUERRE and one of 4,000 frs. to ISIDORE NIEPCE, with reversion of one-half to their widows, to enable them to pursue their studies. It was, in a great measure, by this liberality that the early success of photography was insured. But it deserves to be remembered that THOMAS WEDGWOOD, as far back as 1802, discovered a method of copying paintings on glass and making profiles by the agency of light on nitrate of silver, of which an account was published at the time. But he was unable to give any permanence to the copies.

THE Report of the Nottinghamshire and Midland Merchants and Traders' Association indicates the opinion which men of business now hold about the hazardous speculations of building societies. It is suggested that all building societies ought to be registered, and be subject to the Act of 1874; that proper balance-sheets, according to an approved form, should be issued, and filed with the Registrar of Joint-Stock Companies, in the same way as life assurance companies' accounts now are; that the balance-sheets should be examined and certified by competent auditors, such as experienced accountants or actuaries; and that some limit should be placed to the present dangerous form of balloting for the advance of moneys without interest.

THE supervising architect of the American Government, in his annual report, refers to three conditions, which, under provisions of existing law, operate to the disadvantage of the public service, viz.: 1, the limit of cost of public buildings appears in many cases to have been fixed without sufficient regard to the needs of the public service in cities where the buildings are to be constructed; 2, the appropriations, made from time to time within the limits of cost, are often inadequate for the proper prosecution of the work after its beginning; 3, under existing law, no contract can be made binding the Government to an expenditure in excess of an existing appropriation. During the last year work has been in progress on forty-two new buildings, under the direction of the supervising architect, of which number sixteen have been begun, five completed, and two others practically completed. The year's expenditure on all new buildings, including sites, amounted to 2,772,413 dols. 58 cents; for repairs and preservation of public buildings, 164,102 dols. 32 cents; for heating, hoisting, and ventilating apparatus, and repairs to same, 135,000 dols.; for vaults, safes, and locks, 80,362 dols.; and for storage of silver dollars, 85,402 dols. 32 cents.













"INK PHOTO," SPRAGUE & CO., LONDON.

## AN IDYLL.

BY ALBERT HYNNAIS.

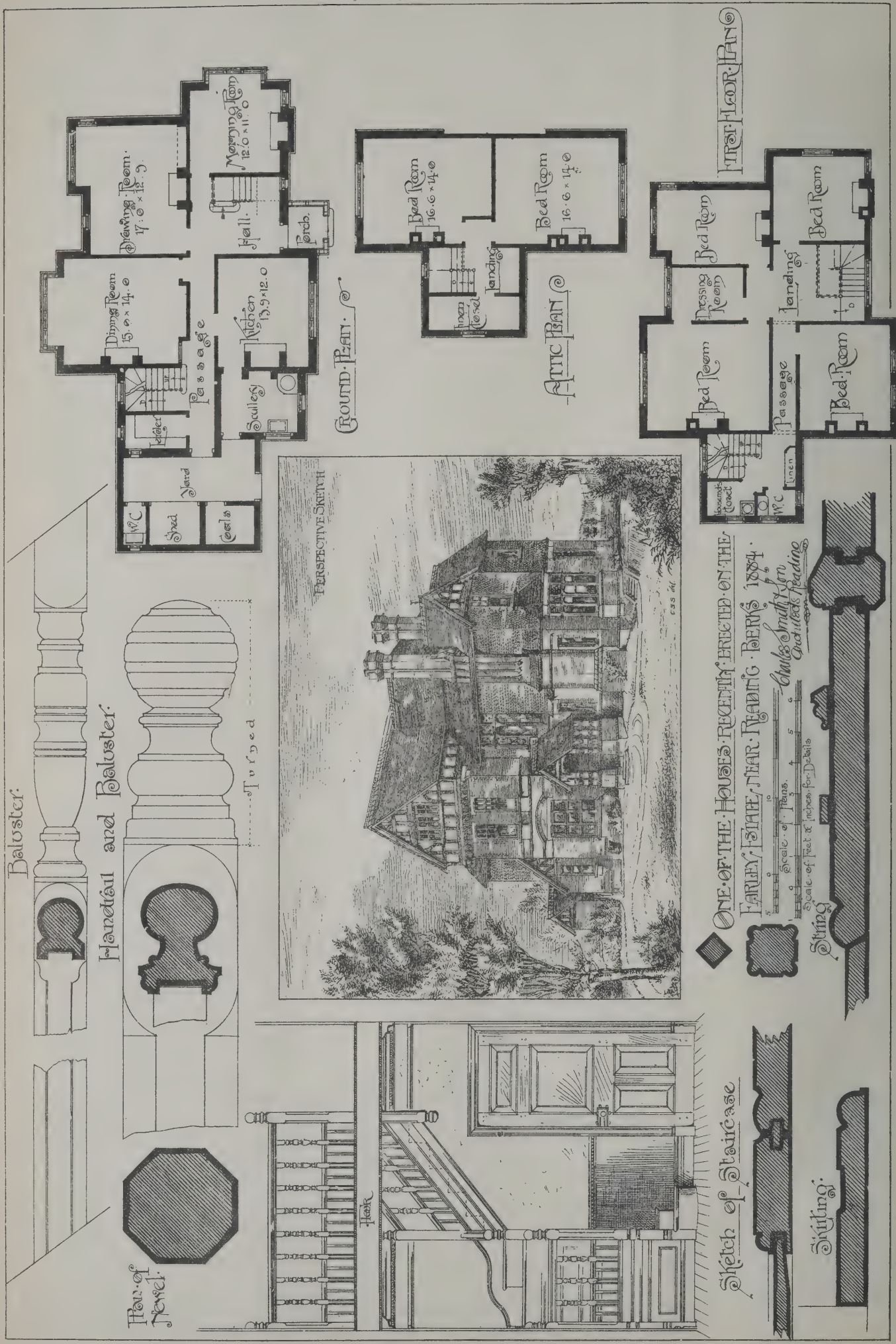












PERSPECTIVE SKETCH

GROUND PLAN

ATTIC PLAN

FIRST FLOOR PLAN

ONE OF THE HOUSES RECENTLY ERECTED ON THE FARLEY ESTATE, NEAR READING, BERKS. 1884.  
*Charles Smith & Son, Architects Reading*

Scale of Feet & Inches for Details

Stairing





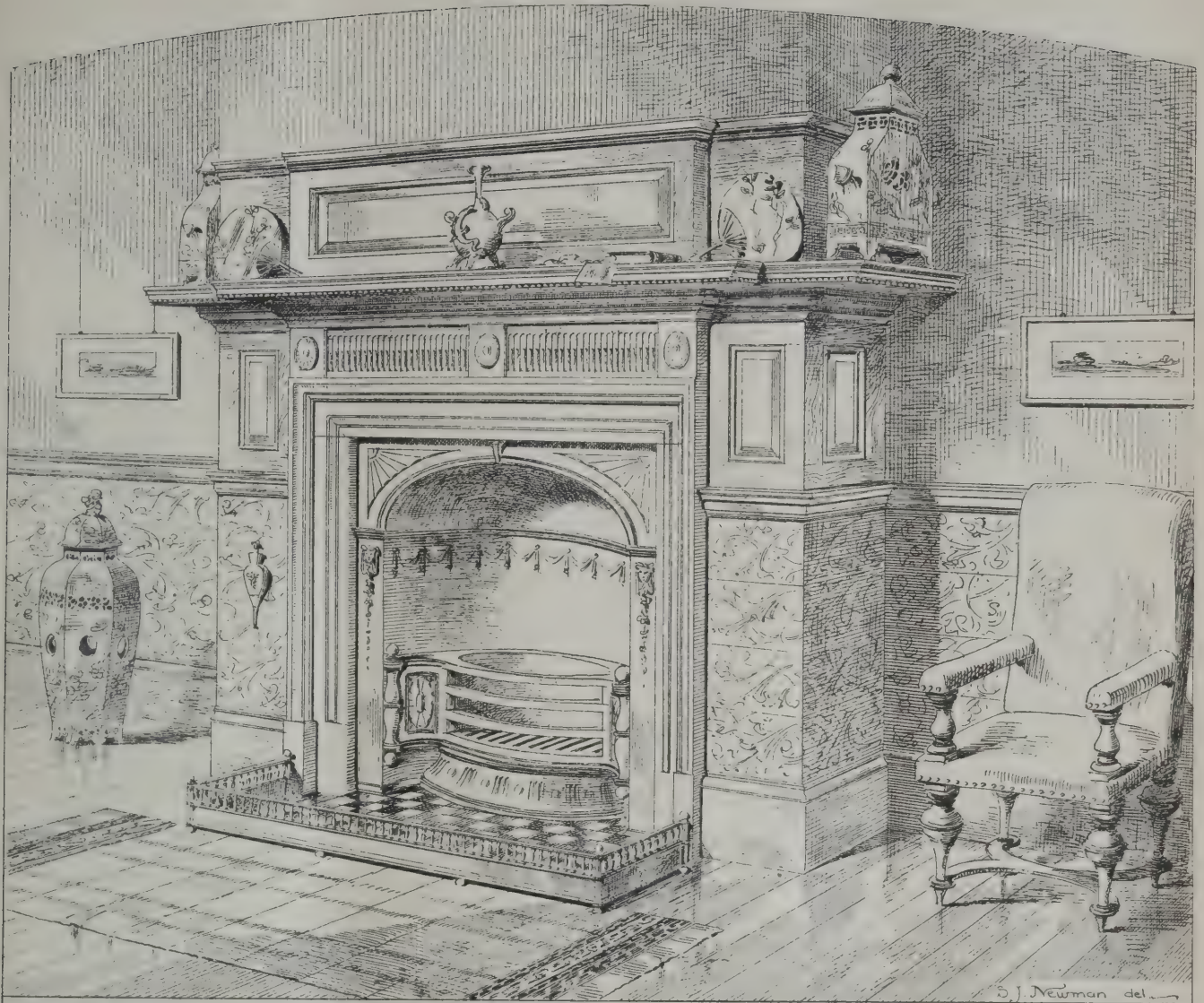




Spottiswoode & Co. Lith. London.

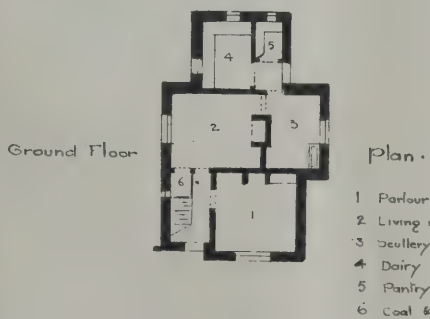
NEW WAREHOUSES: CANNON STREET, E.C.  
GEORGE EDWARDS, ARCHITECT.





S. J. Newman del.

Chimney Piece in Drawing Room · St. Giles Vicarage · Northampton · Samuel J. Newman, A.R.I.B.A. · Architect ·



- 1 Parlor
- 2 Living room
- 3 Scullery
- 4 Dairy
- 5 Pantry
- 6 Coal &c



· Cottage for Earl Cowper's estate, Duston ·

Samuel J. Newman, A.R.I.B.A.  
· Architect · Northampton ·







OLD · WROUGHT · IRON · GATE  
*Scraplost Hall near Leicester.* ~



*Spottiswoode & Co Lith London*







## ILLUSTRATIONS.

THE success attained of late years through Europe by Austrian and Hungarian painters has been very remarkable, but it has been mainly in large historical pictures. M. ALBERT HYNNAIS, of Vienna, who now resides in Paris, has shown by his works that an Austrian artist can compete with Frenchmen in that decorative manner which was supposed to have been a special product of Paris. The illustration, which we give from one of M. HYNNAIS's decorative panels, is characterised by a grace that is worthy of his former master, M. BAUDRY.

## NEW WAREHOUSES, CANNON STREET, E.C.

THESE buildings are erected on the north side of Cannon Street, close to St. Paul's Churchyard, for Messrs. SPENCER, WICKS & Co., of Bread Street, on a site formerly occupied by Messrs. CHAS. CANDY & Co.'s warehouse, which has been divided into three portions—one warehouse facing Watling Street, and two fronting Cannon Street. The buildings are of a plain, substantial character, and the front is built of Portland stone. Messrs. MARTIN WELLS & Co., of Aldershot and London, were the contractors, and Mr. GEORGE EDWARDS, of Brompton Road, S.W., the architect.

## HOUSE, EARLEY, NEAR READING.

WE illustrate this week one of the houses on the Earley Estate, near Reading, recently erected for the owners of the property. The estate is about a mile out of Reading, on the brow of a hill, and commands fine views of the town, the Thames valley, and the Oxfordshire hills. The house is built of local red brick, with tile hanging and occasional half-timber work. The principal joiner's work is in pitch-pine, stained and varnished. The accommodation is shown by the accompanying plans. The work has been satisfactorily executed by Messrs. SPEAR & KING, from the designs and under the superintendence of Messrs. CHARLES SMITH & SON, architects, of Reading.

## CHIMNEY-PIECE, ST. GILES'S VICARAGE, NORTHAMPTON.

THIS chimney-piece is of wood, painted in light tones to match the room. The dado shown is of Lincrusta. The long panel over the shelf has a bevelled mirror, and the four small panels have mirrors. The woodwork was executed by Messrs. G. & A. BROWN, Newman Street, London, from the design of the architect for the vicarage, Mr. S. J. NEWMAN, Abington Street, Northampton.

## COTTAGE, DUSTON, NORTHANTS.

THIS is a sketch for a better-class mechanic's cottage proposed to be erected at Duston for Earl COWPER, to cost about 400/. The walls to be of the local stone obtained on the estate, being of a very pleasing colour; the upper portion of the exterior to be covered with brown Broseley tile-hanging, and the roofs with brindled tiles. Mr. S. J. NEWMAN, Northampton, is the architect.

## GATE, SCHAFTOFT HALL.

## YORK ARTS GUILD.

A LECTURE on the "Domestic Life of the Edwardian Period," as shown by its architecture, manners, and customs, was delivered by Mr. Priestley Shires, in the saloon of the York Arts Guilds, Stonegate, on January 29. The lecture was illustrated with measured drawings and sketches, prepared by Mr. Shires. There was a large attendance of members and friends. Mr. J. Watson, the president, presided.

Mr. Shires, after referring to the historical part of the subject, spoke at length on many interesting details, both as regards the plan and character of the houses of the period, and described the purposes for which each room was used, together with the gold and silver plate, tapestry, furniture, &c., &c. Mr. J. W. Knowles, vice-president, proposed, and Mr. G. W. Milburn, seconded, a hearty vote of thanks to Mr. Shires, and after a few remarks from the President, the meeting terminated.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE seventh ordinary meeting of the Institute was held on Monday evening, Mr. Ewan Christian, president, in the chair.

## Award of Prizes, &amp;c.

The PRESIDENT announced that the Pugin Travelling Studentship had been awarded to Mr. W. H. Bidlake, of Leicester, and a medal of merit to Mr. Herbert Osborn Cresswell, of 19 Queen Anne's Gate, Westminster. The Godwin Bursary was awarded to Mr. John Bradshaw Gass, of Bolton, who proposed to visit certain cities in Canada and the United States of America.

## Gold Medal.

The PRESIDENT said the Council proposed to submit to Her Majesty, as the recipient of the Royal Gold Medal, the name of Dr. Henry Schliemann, of Athens, hon. corresponding member, for his excavations at Hissarlik, Mycenæ, Orchomena, and Tiryns, and for his various works describing his discoveries.

Professor KERR made a suggestion that the Council should consider the propriety of awarding another medal of merit to Mr. Maclaren, the third in order in the competition for the Pugin Travelling Studentship.

Mr. CURREY supported this suggestion, and said that, judging the works submitted, it had been matter of difficulty to decide the order of merit between Mr. Cresswell and Mr. Maclaren.

The suggestion was approved of.

Mr. MAURICE B. ADAMS then read a paper on

## Architectural Drawing.

Mr. Adams called to mind that skill in architectural drawing and greatness of treatment in architecture could not be taught or learned by talking of them. He then described the beautiful ideal architect, as sketched in a quaint old French book on architecture in Sir John Soane's library, to show that actual work was better than words, and example of practice better than theories of precept. Acting on this, Mr. Adams said that, aided by several friends and collectors, he had brought together for exhibition a rather comprehensive series of many typical and historically interesting examples of architectural sketching and drawing, including remarkable specimens by Inigo Jones from the Royal Library at Windsor, lent to him by special permission of Her Majesty. Others equally valuable were contributed by the Duke of Devonshire. The series represented most of the names of leading Englishmen to the present day whose drawings characteristically illustrated his subject. They had been selected that he might exhibit side by side some of the best architectural drawings ever produced by students in the English school, and workers in the more recent successive phases or revivals of all the styles, and thus afford a practical lesson such as few essays could possibly give. As to the literature of the subject, Mr. Adams alluded to papers by the late Mr. Burges, A.R.A., Mr. R. Phené Spiers, Professor Donaldson, Mr. H. B. Garling, Mr. Ashpitel, and a paper of his own, "Architectural Illustrations," read at a meeting of the Architectural Association in 1877. Mr. Burges, with an ardent love and masterly knowledge of Mediæval architecture, the thirteenth-century phase of which he always taught them to admire, described characteristic examples of Mediæval drawing, and advocated, as consequent upon the progress of the Gothic revival, the use of a similar style of bold outlining, and which he himself so charmingly adopted in his drawings. With still greater force he urged the necessity of learning to delineate the figure and animal forms. Mr. Phené Spiers, a most successful student from Paris and an authority of considerable experience at home, with equal devotion to his art, claimed for the modern French system of shadows and tints many advantages. For his own part, Mr. Adams confessed to a decided preference for the individual character and personal freshness peculiar to English drawings, and while admiring the French mode, he should be sorry to see it adopted literally here. Despite of disadvantages, or possibly failings, English architectural education and draughtsmanship had made remarkable progress in the past few years. Moreover, the public interest taken in architecture and the higher forms of architectural delineation had increased and become more widespread. As a set-off against this, owing to the increased struggle of modern daily competition, there was a scamped and hurry-scurry work done under pressure, and further, mountebank performances of acrobatic draughtsmen and designers meant only to attract, men whom Mr. Ruskin had described with pungent terseness. Drawing, if not the chiefest qualification for an architect, was certainly of paramount importance to him. This assertion might seem uncalled for, had it not of late become the shibboleth of a would-be advanced art party to decry and discredit good drawing. This negative view had taken a very tangible form, and a well-known member of the Institute, who had put up more buildings of a kind in London than any other architect living, told him but



the other day that one reason why the Royal Courts of Justice were in his opinion so miserable a failure, was because Street was such a splendid draughtsman. No better protest against such theories could, he thought, be offered than the works exhibited that night, including such names as Inigo Jones, Carter, Pugin, Barry, Cockerell, Street, Burges, Ruskin, Nesfield, Norman Shaw, Ernest George, E. W. Godwin, &c. Sir Edmund Beckett, who had been described elsewhere as "our only British architect," once told him, and he was not surprised to hear it, that he was not much of a draughtsman. Sir Edmund Beckett was supposed to be a leader of public opinion in regard of the failings of architects generally. "Architects," said the public, "are all very well to make pretty drawings, but only those who venture on ground that angels fear to tread court failure or waste money by attempting to realise their pictures in bricks and mortar." Though the criticism was untrue in a general sense, it was perhaps not so wrong as persons in the profession might imagine, for half the troubles of an architect were due to careless drawing and slipshod preparation of details. Without good draughtsmanship it was impossible to convey your ideas to the workman. Good drawing was the secret of much of Mr. Street's success as well as the leading beauty of his versatile designs; but it must be remembered that it was long practice that had won him the dash and cunning of his mature hand. Mr. Street's chief lesson was good, honest, hard work, and the same was the point emphasised by the entire collection of drawings. Most were private studies drawn not as pictures merely, but simply to record and impress on the mind the architecture thus delineated. Architects could not draw too well for the purposes of their art. The architect's object was the erection of buildings, and not merely the elaboration of drawings of them. Sketches and measured work were made with the view of storing his mind with knowledge and cultivating his taste. His preliminary drawings and designs for his clients should illustrate his proposals in the best and most easily understood form, and his working plans and contract details show actually to precise scale the designs resolved on for execution. Architectural drawing also included the more advanced and elaborated studies made for exhibition, or for the illustration in perspective of either ancient or modern buildings, schemes for decoration, and details of ornamental design. Each of these divisions was as necessary to good work as the other, and no good architect could afford to neglect them.

Mr. Adams referred at some length to the examples of architectural drawings that were exhibited. In connection with Sir Charles Barry the name of the great Augustus Welby Pugin, the master, if not the father, of the Gothic revival, he said must always be associated. As a strictly technical draughtsman, Pugin was not only by far the most able, but also the most voluminous of his day, while his figure drawings and artistic powers as a water-colour artist were even now almost unsurpassed by architects. Pugin was generally supposed to have drawn in a hard, cold manner and unsympathetic style, but a study of his autograph drawings would at once show what a false impression was given by his published works. The original drawings for his "Book of Examples," executed by himself, Joseph Nash, B. Ferrey, and F. T. Dollman, were many of them as spirited as they could be, and quite unlike the cast-iron backlined renderings seen in the books themselves. Mr. Adams remarked that no list of modern examples of drawing would be complete without the presence of M. Viollet-le-Duc, and so he had borrowed from Mr. Wethered an original pencil drawing showing the Romanesque church at Saintes, while the memorial book of autograph facsimiles was in the Institute Library. From Mr. Phéné Spiers also he had a drawing by Professor E. Brune, giving a "Study of Superimposed Orders," which, with Mr. Spiers' "Study of Design," executed in Paris, well represented the French style of architectural drawing he had alluded to.

Professor KERR proposed a vote of thanks to Mr. Adams. A more interesting collection of drawings had, he said, never been presented to the profession, and a more interesting description of them had never, as far as he knew, been given. Mr. Kerr said he remembered his old friend Allom reading a paper on "Representations of Buildings," and he was afraid to say how many drawings he presented to be hung for the occasion, all of them executed that day. "I remember," said Mr. Kerr, "he looked at a very large drawing of mine, which I had done in my best manner, but it was not sufficient, and Allom said, 'Oh, for half an hour at it!'" That would have been sufficient for him. Mr. Kerr said he preferred the present style of drawing almost to Allom's, and this showed the way popular drawings of the time laid hold of one.

Mr. COLE A. ADAMS, in allusion to the collection of drawings, said that the crowded state of the room showed that the art side of the architect's profession always elicited their sympathies. He noticed that drawings of Frederick Deshon hung beside those of his master, the late Mr. Street. Street's idea had been that Deshon was the only man in London who knew how to draw. Mr. Adams seconded the vote of thanks.

Mr. ALFRED WATERHOUSE, A.R.A., said he rejoiced to see the crowded state of the room for once, and so many of the profession enjoying the treat which had been set before them on the walls, as well as the admirable discourse they had had on drawing. He was pleased to hear the practice of sketching had been enforced. English architects differed from their Continental brethren by making perspectives. In our dark climate perspectives had the advantage over other drawings.

Mr. JOHN HEBB doubted the identity of Inigo Jones's hand in some of the drawings.

Mr. AITCHISON, A.R.A., thought the last speaker was under a mistake as to Inigo Jones. Jones, though we called him an architect, was a painter-architect, but not a constructor. Wren was architect and draughtsman; he was the Michel Angelo of this country. The collection of drawings exhibited was the finest he had ever seen, and with Mr. Adams's remarks on drawing he thoroughly agreed.

Mr. R. PHENE SPIERS said Mr. Adams had somewhat misunderstood the tenor of his (Mr. Spiers's) paper, and confounded his remarks on drawing with those on education. In France, Germany, and Holland elevational drawings had tinted shadows projected at an angle of 45 deg., to show the relative proportions of one part of a building to another. They showed at a glance the depth one part projected beyond the other, and the principle was carried into details, capitals, &c. It was impossible, he held, to study a Classical elevation properly without having the shadows projected. Certain definite advantages were gained by this, and you could tell from remarks passed in German and French picture exhibitions that the public understood the meaning of the shadows, and formed their judgment of the pictures accordingly. He had been anxious to see this in England. Perspectives, unlike elevations, were, however, more difficult to make and more difficult to understand. Mr. Street discouraged the principle. Mr. Street, he thought, did not understand it, for he once told the Academy students that the shadows were projected at an angle of 45 deg. on the north side of a building. Mr. Spiers said the principle was tried once in the competition for the Tite prize, but he had never wished to see the experiment repeated. The drawings of the Royal Academy School were made merely in outline with a firm hand, and untinted. No one, however, would have imagined the improvement that had taken place during the last ten years in England as regarded the work of the typical English architect. Professor Kerr had anticipated his remarks concerning Tom Allom, who was the first architect to whom for a short time he went. He remembered the wonderful celerity with which he made his drawings, and though Professor Kerr doubted whether they would go down at the present day, he thought they were the finest competition drawings ever made. He had seen drawings turned out by Allom in about three hours' time, and more should not be required in competition work. It was to be regretted that such an amount of time should be wasted when so much more effect could be obtained by use of the brush, by sepia drawings, than by pen and ink. Cockerell's perspectives were, he thought, finer than any drawings, either English or French, and his skill in drawing and in grouping he considered altogether unequalled. After referring to Professor Brune and Mr. Street, Mr. Spiers remarked that Mr. Waterhouse's drawings would mark an epoch in English architecture, and said that any artist might envy Mr. Waterhouse's ability, as they were drawings done by a person who might be supposed to have nothing else to do but use the brush. As to the inauguration of the additional room at the Royal Academy, now made available for architectural drawings, Sir F. Leighton had expressed to him the hope that it would be well filled by architectural works. Drawings would have to be sent by Friday, Saturday, and Monday March 27, 28, and 30.

The PRESIDENT said their most enthusiastic thanks were due to Mr. Adams for his paper, and for getting together the wonderful collection of drawings exhibited, and that their most cordial thanks were due to Her Majesty and those who had contributed.

Mr. ADAMS acknowledged the compliment, and the proceedings terminated.

## ARCHÆOLOGY IN ROME.

THE inaugural meeting of the British and American Archæological Society has been held in Rome. The opening addresses were delivered by the English Ambassador and the United States Minister, the vice-presidents of the society. Sir John Savile Lumley explained at length on the exceptional opportunities afforded at the present time for archæological studies in Rome by the excavations carried out on behalf of the Government, and by those which are a consequence of the extensive building operations in progress. He gave an interesting description of the enormous stores of objects found—such as hundreds of lamps, sacks of coins, inscriptions, pieces of sculpture, and architectural fragments of beauty, still



awaiting examination and study—and of the museum which was being prepared for them.

Mr. W. Waldorf Astor, the American Minister, speaking on the importance and direction of archæological researches, expressed a hope that the studies of his countrymen in Rome would lead them, on returning home, to further the investigation of that important field of inquiry which America offered in the vestiges and traces of civilisation, dating anterior to the foundation of Rome, when adventurous Phœnician sailors put out for the Isle of Atlantis, and tribes made their way from Europe across Behring's Strait.

Mr. F. M. Nichols, F.S.A., then gave an interesting review of the results of the Roman excavations since the days when everything led to controversy, and spoke of what future excavations might be expected to reveal. Finally, the honorary librarian gave a description of the Mediæval tower of the Anguillara, about to be demolished in the course of the Tiber improvements, and an historical sketch of the powerful baronial family to which it had belonged.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### MR. RUSKIN'S FIRST ARTICLE.

MR. RUSKIN was born in February 1819, and some notes on natural history by him appeared in the *Magazine of Natural History* in 1834, and in the year following there were verses in one of the annuals. The first of Mr. Ruskin's writings on architecture was the article below, on "The Poetry of Architecture," which was printed in the *Architectural Magazine* in November 1837. It is not only remarkable from its style and as the production of a writer who had not reached his nineteenth year, but it foreshadows the principles which Mr. Ruskin insisted on afterwards in his larger works, and especially through the importance given to the emotions as a test of architectural effect:—

The science of architecture, followed out to its full extent, is one of the noblest of those which have reference only to the creations of human minds. It is not merely a science of the rule and compass; it does not consist only in the observation of just rule or of fair proportion; it is, or ought to be, a science of feeling more than of rule—a ministry to the mind more than to the eye. If we consider how much less the beauty and majesty of a building depend upon its pleasing certain prejudices to the eye, than upon its rousing certain trains of meditation in the mind, it will show in a moment how many intricate questions of feeling are involved in the raising of an edifice; it will convince us of the truth of a proposition, which might at first have appeared startling, that no man can be an architect who is not a metaphysician. To the illustration of the department of this noble science, which may be designated the poetry of architecture, this and some future articles will be dedicated. It is this peculiarity of the art which constitutes its nationality; and it will be found as interesting as it is useful, to trace in the distinctive characters of the architecture of nations not only its adaptation to the situation and climate in which it has arisen, but its strong similarity to, and connection with, the prevailing turn of mind by which the nation who first employed it is distinguished.

I consider the task I have imposed upon myself the more necessary because this department of the science, perhaps regarded by some who have no idea beyond stone and mortar as chimerical, and by others who think nothing necessary but truth and proportion as useless, is at a miserably low ebb in England. And what is the consequence? We have Corinthian columns placed beside pilasters of no order at all, surmounted by monstrosified pepper-boxes Gothic in form and Grecian in detail, in a building nominally and peculiarly national; we have Swiss cottages, falsely and calumniously so entitled, dropped in the brickfields around the metropolis; and we have staring, square-windowed, flat-roofed gentlemen's seats, of the lath and plaster, mock magnificent, Regent's Park description, rising on the woody promontories of Derwent Water. How deeply is it to be regretted, how much is it to be wondered at, that in a country whose school of painting, though degraded by its system of meretricious colouring, and disgraced by hosts of would-be imitators of inimitable individuals, is yet raised by the distinguished talent of those individuals to a place of well-deserved honour; and the studios of whose sculptors are filled with designs of the most pure simplicity, and most perfect animation; the school of architecture should be so miserably debased! There are, however, many reasons for a fact so lamentable. In the first place the patrons of architecture (I am speaking of all classes of buildings from the lowest to the highest) are a more numerous and

less capable class than those of painting. The general public, and I say it with sorrow because I know it from observation, have little to do with the encouragement of the school of painting, beyond the power which they unquestionably possess and unmercifully use, of compelling our artists to substitute glare for beauty. Observe the direction of public taste at any of our exhibitions. We see visitors—at that of the Society of Painters in Water-Colours—passing Taylor with anathemas and Lewis with indifference, to remain in reverence and admiration before certain amiable white lambs and water-lilies, whose artists shall be nameless. We see them, in the Royal Academy, passing by Wilkie, Turner, and Callcott with shrugs of doubt or of scorn, to fix in gazing and enthusiastic crowds upon kettles full of witches, and His Majesty's ships so-and-so lying-to in a gale, &c., &c. But these pictures attain no celebrity because the public admire them, for it is not to the public that the judgment is entrusted. It is by the chosen few, by our nobility and men of taste and talent, that the decision is made, the fame bestowed, and the artist encouraged. Not so in architecture. There the power is generally diffused. Every citizen may box himself up in as barbarous a tenement as suits his taste or inclination; the architect is his vassal, and must permit him not only to criticise but to perpetrate. The palace or the nobleman's seat may be raised in good taste and become the admiration of a nation, but the influence of their owner is terminated by the boundary of his estate; he has no command over the adjacent scenery, and the possessor of every thirty acres around him has him at his mercy. The streets of our cities are examples of the effects of this clashing of different tastes; and they are either remarkable for the utter absence of all attempt at embellishment or disgraced by every variety of abomination. Again, in a climate like ours, those few who have knowledge and feeling to distinguish what is beautiful are frequently prevented by various circumstances from erecting it. John Bull's comfort perpetually interferes with his good taste, and I should be the first to lament his losing so much of his nationality as to permit the latter to prevail. He cannot put his windows into a recess without darkening his rooms; he cannot raise a narrow gable above his walls without knocking his head against the rafters; and, worst of all, he cannot do either without being stigmatised by the awful, inevitable epithet of "a very odd man." But, though much of the degradation of our present school of architecture is owing to the want or unfitness of patrons, surely it is yet more attributable to a lamentable deficiency of taste and talent among our architects themselves. It is true that in a country affording so little encouragement, and presenting so many causes for its absence, it cannot be expected that we should have any Michel-Angelo-Bonarottis. The energy of our architects is expended in raising "neat" poor-houses and "pretty" charity-schools, and if they ever enter upon a work of a higher rank economy is the order of the day; plaster and stucco are substituted for granite and marble, rods of splashed iron for columns of verd-antique; and, in the wild struggle for novelty, the fantastic is mistaken for the graceful, the complicated for the imposing, superfluity of ornament for beauty, and its total absence for simplicity.

But all these disadvantages might in some degree be counteracted, all these abuses in a great degree prevented, were it not for the slight attention paid by our architects to that branch of the art which I have above designated as the poetry of architecture. All unity of feeling (which is the first principle of good taste) is neglected: we see nothing but incongruous combinations; we have pinnacles without height, windows without light, columns with nothing to sustain, and buttresses with nothing to support. We have parish paupers smoking their pipes and drinking their beer under Gothic arches and sculptured niches, and quiet old English gentlemen reclining on crocodile stools and peeping out of the windows of Swiss chalets.

I shall attempt, therefore, to endeavour to illustrate the principle from the neglect of which those abuses have arisen; that of unity of feeling, the basis of all grace, the essence of all beauty. We shall consider the architecture of nations as it is influenced by their feelings and manners, as it is connected with the scenery in which it is found, and with the skies under which it was erected. We shall be led as much to the street and the cottage as to the temple and the tower; we shall be more interested in buildings raised by feeling than in those corrected by rule. We shall commence with the lower class of edifices, proceeding from the roadside to the village, and from the village to the city; and if we succeed in directing the attention of a single individual more directly to this most interesting department of architecture, we shall not have written in vain.

**Erratum.**—A paragraph in last week's *Architect* stated that Mr. Ellice Clarke had been appointed county surveyor for Sussex. It should have been "a county surveyor." Mr. Clarke is appointed to the western division, but the eastern division of Sussex for upwards of thirty years has been in charge of Mr. Henry Card, C.E., Lewes.





#### Borough of Croydon Street Improvements Competition.

SIR,—We have been asked by some architects who signed the agreement not to compete unless an assessor was appointed, as to whether the above competition came under the terms of that agreement. After careful consideration of the published conditions, we are of opinion that it is architectural in character, and that architects who signed the said agreement cannot, consistently with the terms of it, compete in this one, as we are officially informed that no assessor will be appointed. If you can give publicity to this letter we shall consider it a favour.

Yours obediently,

(Signed) HENRY CURREY, Chairman.  
 COLE A. ADAMS, } Hon. Secs.  
 ASTON WEBB, }

February 4, 1885.

#### Architectural Drawings.

SIR,—As the late Mr. Bloré was mentioned among the several artists by Mr. Adams in his lecture of Monday last, I should like to state that the working drawings of Lambeth Palace, made by Mr. Bloré, are preserved in the Archiepiscopal Library, which is open daily, Saturdays excepted. There are also two fine water-colours, by Paul Sandby, R.A., of the old gates of Canterbury, among the Kentish collection of prints and drawings, to which notice is invited, and assistance asked in completion.

As an example of the unexpected whereabouts of art, there is here, in the margin of MS. No. 1,106, a pen-and-ink sketch of the west end of St. Paul's Cathedral in the fourteenth century.

Faithfully yours,

February 4, 1885.

S. W. KERSHAW, F.S.A.

#### The Professional Education of Architects.

SIR,—The discussion which recently took place at the Architectural Association is not without interest to the profession at large. From the remarks of the President, at the discussion which recently took place at Conduit Street, it may be gathered that a special committee has been, and is, busily engaged in considering how the educational work carried on by the Association may be rendered, if possible, more effective and useful to the members. This is a wise step, and much good may result from such an inquiry. All who are interested in the Society have been invited to state their views, and to contribute towards the desired end, so that, as far as possible, all interests may be considered, and no hole-in-corner reforms instituted.

Civilisation moves very quickly in these days of steam and electricity, and, with the keen competition which is such a characteristic of our times, it is apparent that the architectural profession has great need to see that it is armed for the conflict. The profession owes a debt of gratitude to the Architectural Association for the wisdom displayed by the founders, and the unselfish manner in which, year after year, those desirous of helping in the work of education, voluntarily come forward and give their services. A glance at the balance sheet yearly published shows at what a very small cost the large amount of work is carried on; and when it is considered that the Institution now numbers over a thousand members, those acquainted with the working-cost of like societies, will appreciate the sacrifice demanded from the active officers in the Association, and the great money-saving they effect by their honorary services. The committee merit success in their labours of readjusting and improving their machinery. The principles upon which the Architectural Association has hitherto worked should be maintained and, let us hope, strengthened and enlarged.

The examination for admission to the Royal Institute of British Architects was undoubtedly a step in the right direction, and, as time goes on, we may see a yet more stringent test applied, and that architects seeking to be admitted as Fellows shall be obliged to show cause why that honour should be conferred upon them. Let it be an understood thing that admission to the Institute requires something more than to be proposed and seconded, and the honour will be sought after; and, if the Institute becomes more alive to the wants of the profession, its influence will be greater, and its voice better listened to. From some cause or other, there is a want of touch and sympathy now existing between the council, the members, and the profession at large, which those who have the desire for greater unity at heart should try to overcome. We believe the council desirous, individually, of establishing a feeling of confidence; but as a body they procrastinate over necessary reforms, and, to all appearances, spend too much time over

matters of trifling interest, which in their own offices would be promptly dealt with. The remedy for much of this will probably be found, if the alterations which have been proposed in relation to the charter are carried out. More elasticity is required, and more of the vigour which characterises the executive of the younger society. Most are ready to give the council full credit for a desire to see the Institute made more popular and representative, and should they extend the franchise, the new voters will give renewed strength to the council, and infuse into the whole body the warmth of younger blood.

Returning to the subject of the examination, let us consider how it is to be prepared for. Students can attend the very useful courses of lectures at King's College and University College, and in the Architectural Association they will find opportunities presented for enabling them to learn some of the many branches of their profession. But the Architectural Association does not go far enough in its teaching. Whether the authorities in the scheme now under consideration will see their way to extend their system has yet to be seen; that they should do so is, in the interests of the Association, to be desired. The failure now to be found in the working of the Association arises chiefly from the fact, that instruction in the scientific branches is not so thorough in its character and so far-reaching as it might be made.

On looking through the Brown Book, it is found that, beyond the two courses of lectures on the History of Architecture and Construction, no special instruction is given in such subjects as warming, lighting, ventilation, or in sanitation, ornament, mouldings, &c., their origin, kind, *motif*, suitability for modern adoption, and the rational use they may be put to, with examples of the various kinds calculated to impress and fasten the student's attention. Again, there is no mention of any defined course upon the many materials which the student ought to know about: their strengths, nature, compositions, durability, causes of decay, &c.—questions which force themselves upon the practitioner in some form or other every day. Estimating and quantities are not taught. The chemistry of building materials apparently finds no place now in their curriculum. Perspective, stereotomy, and such-like studies are not included either. Thus it will be seen that the student of to-day, though much better off than those who went before him, still needs those sources of instruction provided for him, if he is to hold a high place in his profession and in society.

To teach many of these subjects requires the knowledge and experience of older men, who are besides capable of imparting what they know to others. It is hardly to be expected that, relying only on honorary and voluntary help, the Architectural Association can provide such instruction; but there is no reason why the suggestions thrown out by the President at the discussion which took place the other evening should not be carried into execution. If the Institute demands the test of an examination, the council should contribute towards the means for passing it, either by organising a course of instruction themselves or by granting a sum of money to the Architectural Association, unhampered by any conditions beyond those of a statement from the committee showing how the money has been spent.

Were the committee of the latter body in possession of funds, they might easily supplement their present work by classes and lectures with some paid teaching, and so add increased usefulness to their Society. It is difficult to see any reason against adopting such a course. The Association has done good service in the past; it must take a fresh departure now with the times, or it may find, in default, that what it does not give, will be provided in other quarters, and its classes and members suffer in consequence. Competent men can surely be found, who, for moderate fees, would undertake to teach those subjects which are not taught now, and the Association, would gain in prestige. We trust good counsel will prevail, and that no feelings of rivalry and jealousy will interfere should the older Society offer aid to the younger. The most harmonious good feeling now exists, and may be strengthened, conferring benefits on both institutions, and extending them to the profession generally. The scale of requirements and acquirements has risen in every walk of life, and architects must go with the times, or find themselves elbowed away by outsiders.

Individual men in any profession will work their way to eminence, apart from any organised system of teaching, but would generally be the better for having had it. But it is the general body who need to be systematically taught—the men who are pouring into the profession who need properly educating. The amount of ignorance existing among many architects, of even the rudiments of their calling, tells most injuriously upon the reputation of the profession generally, and it is only by demanding some test of competency that this can in any way be checked.

Let the public learn that in employing a member of the Institute they have some guarantee of competency, and men



will qualify themselves for membership. It is not to be supposed for a minute that to pass the examination is the "be all and end all here" of an architect's aim; but it is something towards it. As time goes on, the requirements of the Institute for admittance will become greater, and perhaps at no very distant date we may see architecture a diplomated profession, and a college established for the thorough and systematic training of its members. In the meantime, something may be done. Let that something only be taken up with the determination to do it as thoroughly as circumstances will allow, and fearlessly. The profession has slumbered long enough; something more than making pretty artistic drawings is necessary, and if art cannot be taught, but is inborn, as we are so often told, it may be developed, and, in fact, must be, by systematic study; and science, its twin sister, must be most assiduously courted by him who wishes success. Neither sister can be won without a life of serious devotion, or any success achieved without showing that it is merited.

KNOWLEDGE IS POWER.

## LEGAL.

### Queen's Bench Division.—Feb. 2.

(Before MR. JUSTICE GROVE and MR. BARON HUDDLESTON.)

SILSBURY v. ISLE OF WIGHT SANATORIUM COMPANY.

#### ARCHITECT'S CERTIFICATES.

In April 1884 a contract was entered into with the plaintiff, who is a builder, for converting a building at Blackgang, Isle of Wight, into a sanatorium. The amount was 1,246*l*. There were the usual clauses in the deed that extra works were to be authorised by the architect, that his final certificate was necessary, and that in case of dispute it should be referred to him, and his decision was to be taken as final. The contract and extra works were duly completed in last August. Certificates were given in November by the architect, one for a balance of 225*l*. arising out of the contract, the second for 357*l*. for additional works, and the third for 113*l*. for works out of the contract. The plaintiff was paid 100*l*. on account, as the directors were not in a position to pay the whole. It was arranged that there should be an inspection of the particulars of the extra works. In the inquiry some differences arose, and an action was accordingly brought to recover the balance due on the certificates, and it was put on the part of the plaintiff, the contractor, as a clear case in which under the architect's certificates he must be entitled to recover, and in which, therefore, he was entitled to summary judgment under "Order XIV.," the order giving a power of summary judgment in cases in which there is no defence. A Judge at Chambers, however, gave leave to defend the action, and this was an appeal by the plaintiff against that decision. The affidavits on the part of the defendants stated that the prices were too high, and that if these were considered and penalties for delay were allowed there would "scarcely remain anything due." But the defendants did not state that they had ever objected to the architect that his certificates were wrong.

Mr. Charles, Q.C., submitted that the plaintiff's case was clear, and that there could be no defence against the architect's certificates showing the sums claimed to be due.

Mr. Justice Grove: But what the contract says is not that the certificate shall be final, but that the decision of the architect on any dispute between the parties, which is to be referred to him, is to be final. Is not this a "dispute" which ought to be referred to him?

Mr. Charles: It is in effect decided by his certificates given.

Mr. Justice Grove: Is there not a "dispute" arising upon his certificates?

Mr. Charles: How can there be, as his certificates are to be final?

Mr. Baron Huddleston: That is not the contract, but his "decision" on a "dispute" is to be final, and he could not decide without hearing the parties on the "dispute."

Mr. Charles: The only dispute that can arise is as to whether he ought to have given his certificates, and it is provided that on his certificates the moneys shall be payable.

Mr. Baron Huddleston: If there is a dispute between the parties they are entitled to be heard upon it; and it does not appear that, upon the certificates, the parties have been heard by him.

Mr. Charles: That is the fault of the defendants, who ought to have objected to the certificates being given. (He cited a case of *Goodyer v. Corporation of Weymouth* to the effect of his contention in 35 *Law Journal Reports*, Common Pleas, but the Court said the point had not been taken in that case.) What is there to decide if the certificates are rightly given?

Mr. Baron Huddleston: Suppose a mistake in addition, making a large sum due which is not due? Is there to be no means of correcting it?

Mr. Justice Grove: Is the certificate to be in any case final, though the contract says it is not to be so?

Mr. Charles: That would be a case of misconduct, and no doubt it might be corrected. But that is not this case.

Mr. Justice Grove: Suppose a mistake in the measurements?

Mr. Charles: In this case there has been a general payment on account, and an acknowledgment that the money has been spent on other matters.

Mr. Baron Huddleston: That is not material now, for the question is whether the certificate of the arbitrator is final.

Mr. Charles: Surely after such an admission and a part payment the defendants ought not to have unconditional leave to defend the action?

Mr. Justice Grove: The most satisfactory course would be to refer the case back to the arbitrator.

Mr. Charles: In the 26 *Law Times*, p. 763, is a case which shows that the certificates are final.

Mr. Justice Grove said that case was different from this, as there it was only provided that the engineer should certify that the work was done. Here there is a provision that the arbitrator is to decide any dispute between the parties.

Mr. Charles: The defendants ought to have gone to the arbitrator, either before he gave his certificates or immediately upon their being given, and asked him to review his decision.

Mr. Baron Huddleston: That seems to be an answer to the argument that the arbitrator is to decide any disputes between the parties. You say that the defendants ought to have raised a dispute by objecting to the certificates. I do not find on the affidavits any statement that they had so objected.

Mr. Charles: No; there is no such statement and could not be; yet the action was not brought until a month after the certificates.

Mr. Bompas, Q.C., for the defendants, the company, said to refer the case back to the arbitrator would not be very satisfactory to them.

Mr. Justice Grove: Because he has already decided against you.

Mr. Bompas: On account of his having given his certificates as he did, he would naturally be inclined to uphold them. It was enough, surely, that there was a substantial question to be decided between the parties, and a Judge at Chambers had held that there was such a question. There were two questions here: whether in law the architect's certificates were conclusive; and whether, in fact, if that were not so, the money was really due. Now as to the question of law the certificates were not final and had not indeed been given on the questions now raised. The defendants put forward an affidavit that, on a proper investigation of the accounts, nothing more would be found due to the contractor, and the contractor, relying on the certificates, did not swear that anything was now due. Surely the defendants ought to be let in to contest the matter and defend the action.

At the conclusion of the second day's hearing the Court asked when the case was to be tried, and were told that it was to be tried at Winchester next week. They then said that they thought that if 400*l*. were paid into Court the company might be let defend.

Mr. Justice Grove said, in announcing this decision, that there was a difference of opinion between himself and his brother as to whether the company ought to have leave to defend, and under the circumstances the order suggested was the best that could practically be adopted.

Mr. Baron Huddleston agreed in that view as the practical result. He differed with his brother as to whether there ought to be leave to defend, but would not insist on his view, especially as the only result of his doing so would be that the order of the Judge would stand.

### High Court of Justice.—Chancery Division.—Feb. 3.

(Before MR. JUSTICE KAY.)

#### BULLERS v. DICKINSON.—LIGHT AND AIR CASE.

The plaintiff in this case, a builder, was the owner of certain houses on each side of Gilbert Court, a *cul-de-sac* situate at right angles to the north side of Jacob Street, Bermondsey. On the west side of the court there were four houses—Nos. 1, 2, 3, and 4 Gilbert Court—No. 1 being the nearest to Jacob Street; and on the east of the court was a house, No. 1, Jacob Street, which fronted that street and presented its side to the court. Jacob Street was now 24 feet wide, and No. 1 stood on part of the site of an old toll-house which was pulled down about nine years ago. The frontage of the old toll-house, which was a wooden house three storeys high, inclined forward at an angle into Jacob Street, and when it was pulled down the then owner sold that part of the site which projected into Jacob Street to the Vestry of Bermondsey for the purpose of widening and straightening the street. He then erected the present No. 1 Jacob Street, a brick building one storey high, carrying back the frontage to the line of the rest of the street. This new building, which was used as a shed for storing iron, had a window in it occupying,



according to the evidence, a portion of the corresponding space of an ancient light in the old house, but situated in a wall not built in the same plane as or parallel to the old wall, but set further back, 7 feet at one end and 4 feet at the other. The defendant had erected on the opposite side of Jacob Street a large building 57 feet high, and the only question of novelty in the case was whether, under these circumstances, the ancient light of the ground-floor window of No. 1 Jacob Street had been lost or abandoned. With regard to the houses Nos. 1, 2, 3, and 4 Gilbert Court, the chief defence was that there had been no material diminution of the access of light and air; and on the one side a number of people in a humble station of life, who occupied tenements in the court, deposed to their own actual experience of the loss of light; while on the other there was the evidence of certain experts that no material diminution of light or air could have taken place, and one of these witnesses gave evidence that, having regard to the class of people who inhabited the court, there was as much light as they could expect. The hearing of the case has occupied nearly three days.

Mr. Justice Kay delivered judgment, in which he recapitulated the evidence and referred to the authorities. As to the loss or abandonment of the ancient light in No. 1 Jacob Street, he said that the burden of proof lay on the defendant to show this, and he had not discharged it. If only the part of the old house which projected had been pulled down, and a wall, built across the remainder of the site, with a light in it, had been erected, leaving the rest of the old house standing, it could not have been said that the light had been abandoned; and there was no difference in principle between this and what had been done. The projecting piece had been parted with expressly that it might not be built upon, but thrown into the street, and the new No. 1 had been built without any delay. Nor was the smallness of the present room on the ground floor of No. 1 material, as had been argued. Upon the other points his lordship was satisfied that the defendant's huge building did interfere with the access of light and air to Gilbert Court; and, after commenting severely upon the evidence of some of the expert witnesses, and observing that the question was not what the class of persons were who inhabited the houses, but whether the light to which they were entitled was or was not materially diminished, he ordered the defendant to pay 200*l.* damages within a month, and, if this were not done, declared that the defendant's building materially interfered with the plaintiff's light, and gave him liberty to apply to the Court to give effect to that declaration, the defendant to pay the costs of the action.

#### Manchester Assizes.—Jan. 29.

(Before MR. JUSTICE DAY).

MITCHELL *v.* SHEPLEY.

ARCHITECT'S COMMISSION.

This action was brought by Mr. Thomas Mitchell, F.R.I.B.A., against an alderman of Oldham, to recover 54*l.* balance of commission. The question in dispute was whether the plaintiff was entitled to 5 per cent. or 2½ per cent. commission. The defendant contended that he was only entitled to 2½. In May 1882, the defendant instructed the plaintiff to draw plans for fifteen houses which he proposed erecting on a plot of land at Oldham. The plans were drawn and approved by the Borough Surveyor on July 2, and quantities were taken out in the ordinary way. Plaintiff said that nothing was ever suggested that he should receive less than the usual commission, except on one occasion in June, when the defendant said that as he was a member of the Town Council, vice-chairman of the Board of Guardians, and without doubt the future chairman, he ought to reduce his terms, as he would give him his influence in connection with Corporation work and the new workhouse schools that were then projected. Plaintiff replied that he could not reduce his terms to him (the defendant) without reducing them to others, but that if he carried out his suggestion he should be quite prepared to give him discount equal to 2½ per cent. The defendant indignantly denied ever having made this offer. Plaintiff said that since this conversation took place the defendant had said once or twice that he should expect the work to be done at a lower rate. He said he could bring several members of the Board of Guardians and the clerk to prove that he had used his influence. The defendant's version of the agreement as to terms was that as he had heard that the plaintiff was in the habit of having the quantities taken out in Manchester, and not by his clerks at his own office, he declined to pay 2½ per cent. for the quantities. He said he told the plaintiff that he only intended to pay 5 per cent. on the whole work. The plaintiff at first demurred to that arrangement, but afterwards accepted 5 per cent. for the whole work. Defendant denied having promised the plaintiff to use his influence for him in the Town Council and in the building of the workhouse schools. The Judge directed the jury to consider whether a contract was definitely entered into when the defendant gave instructions for the drawing of the

plans, remarking that if a legal contract was then made, it could not be affected by the subsequent conversations. The jury returned a verdict for the plaintiff for the full amount claimed.

#### GENERAL.

**M. G. J. V. Clairin** has completed a series of water-colour drawings of the principal scenes in the drama of "Theodora," which is attracting immense audiences every night to the Porte St.-Martin Theatre.

**An Exhibition of Eastern Art**, comprising Persian, Rhodian, and Damascus works from various private collections, will be held in the Burlington Fine Arts Club during March and April.

**A New School of Art** is about to be erected in Lincoln, and is expected to be opened by December 1.

**Dr. John Evans, F.R.S.**, in a late address to the Archaeological Society at St. Albans, condemned the work now carried on by Sir Edmund Beckett at the cathedral. It was said that great damage had been done in dealing with the ancient work of John of Wheathamstead, and it was regretted that the society was not stronger, in order to withstand the unchecked vandalism, for it could be called nothing else, by which so much ancient and valuable work had been destroyed.

**The King of the Belgians** has approved of the election of M. H. Hymans as a titular member of the Royal Belgian Academy of Fine Arts.

**The Private View** of the Spring Exhibition of the Nineteenth Century Art Society, at the Conduit Street Galleries, will be held on Saturday next, and the exhibition will be open to the public on the following Monday.

**The Surplus** of the Health Exhibition will amount to about 19,000*l.*, but it is not to be disposed of until the financial success of the Inventions Exhibition shall be secured.

**M. Franceschi** has completed a bust of Her Royal Highness the Countess de Paris, which will be exhibited at the next Salon exhibition.

**Professor Baldwin Brown** will read a paper on "Gottfried Semper and his Theory of Architecture" at the meeting of the Edinburgh Architectural Association on Monday next.

**Mr. John Jones**, art metal worker of Walker's Croft, Manchester, has just supplied the whole of the casements and lightning-conductors used in the new town-hall at Hyde, near Manchester.

**Mr. John Graham** has lent to the Glasgow Institute of Fine Arts Gainsborough's picture of *The Sisters*, Turner's *In the Scheldt*, and Ary Scheffer's *St. John at Patmos* and *Mary Magdalene*.

**Mr. A. Bruce Joy** has completed a bust of Miss Mary Anderson in a medium the composition of which is being patented. The work is at present exhibited at the Free Library and Museum, Liverpool, where Mr. Joy's large marble statue of Mr. Bushell has been unveiled by the Archbishop of York.

**M. Vinçotte** has nearly completed the statue of Aguesseau, which was commissioned by the city of Brussels.

**A "Portrait of an Old Woman,"** by Rembrandt, has been sold in the Hôtel Drouot, Paris, for 25,000 francs. *The Artist's Wife as Pallas*, of which the history was less certain, brought 12,000 francs.

**Mr. James Gowans** has been unanimously recommended by the Council of Guildry to be the successor of the late Mr Hutchison as Dean of Guild for Edinburgh.

**The Annual Meeting** of the Leeds Society of Artists took place on Tuesday, and arrangements for holding an autumn exhibition were considered.

**Additional Vestries**, church parlour, lavatories, &c., are about to be erected in connection with Christ Church, Enfield. Mr. W. D. Church, of 12 South Place, Finsbury, E.C., is the architect.

**Mr. G. Beavell**, architect to the Duke of Northumberland, has delivered a lecture "Home, Sweet Home; or, House Sanitation," in the Town Hall, Alnwick.

**M. Koehlin's** collection of pictures were sold last week in Paris, and realised 74,755 frs. The highest price, 16,200 frs., was obtained for Troyon's *Abreuvoir*. *A Turkish Interior*, by Diaz, brought 15,500 frs.

**Mr. L. Kershaw**, of Brighouse, has commenced the laying-out of the Corporation cemetery at Bowling. The buildings will be erected by Mr. Hepworth.

**Messrs. Rottmann, Strome & Co.** have manufactured and supplied the wall and ceiling decoration used in Messrs. Spiers & Pond's refreshment-rooms at the exhibition of a Japanese village in Humphreys Hall.

**Mr. Charles Longnet Higgins**, of Turvey Abbey, Beds., died lately in his seventy-eighth year. With the aid of Sir Gilbert Scott, he restored the parish church of Turvey at great cost to himself, besides erecting schools and rebuilding a great part of the village. From his exertions he was known as "the lay bishop of the diocese."



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, FEBRUARY 7, 1885.

## THE LITERARY AND ARTISTIC SOCIETY.

ON Monday last there was held at Willis's Rooms one of the monthly conversazioni of this young but most flourishing Society. The programme included a concert, in which Miss Pauline Lowenstark's brilliant playing of a "Rhapsodie Hongroise," by Liszt, and Miss Lena Laws's singing of Pinsuti's "Dream of Peace" call for special commendation. Mr. Sergeant Lee amused the audience by an admirably delivered recitation of the trials of "The Amateur Dramatic Association." During the interval, and while the second half of the concert was being performed, Dr. Carter Moffatt, the now celebrated inventor of the ammoniaphone, gave a short address on the properties of that remarkable instrument, and especially on its efficacy in strengthening and adding flexibility to the vocal powers and greatly improving the tone and *timbre* of the voice. A large number of these flute-like instruments were placed at the disposal of the audience, many of whom availed themselves of the opportunity to personally test this most recent of scientific discoveries. One gentleman, after reciting a part of Hamlet's address to the players, took a few deep inspirations through the ammoniaphone, and redelivered the same lines with a voice distinctly improved both in power and quality. Meantime, in the large room, Mr. W. H. Delf read a criticism of Mr. Chamberlain's recent speech, and the Rev. Dr. McCann gave "A Chat on Thought Reading," followed by some practical experiments which met with only moderate success. Shortly after 10 o'clock the seats were removed from the centre of the room and dancing commenced, and was continued until after midnight, thus bringing an excellent and successful entertainment to an agreeable close.

## SOUTHAMPTON WATERWORKS. Experimental Trials.

THE question of the best means of obtaining a fresh-water supply for the borough of Southampton, which has occupied the attention of the inhabitants of that town for nearly fifty years, seems at last to have been solved. On the chalk hills of Otterbourne, situate eight miles north of Southampton, springs rise to the surface and flow southward until they join the river Itchen. These springs are but the overflow from a great watershed created in the extensive outcrop of the chalk formation which reaches far up into Wiltshire. After careful examination of the district, and with a full knowledge of the geological features, a spot was selected by Mr. W. Whittaker, of Her Majesty's Survey Department, as suitable for obtaining the very large quantity of water required.

Mr. W. Matthews, C.E., the engineer to the Corporation Waterworks, then had the ground between Southampton and Otterbourne surveyed, and prepared the scheme which has just been unanimously sanctioned by the Town

Council, and also approved at a town meeting of ratepayers.

The "Abyssinian" tube-well system is that adopted for the preliminary borings, and Messrs. Le Grand & Sutcliffe, of London, have already completed two of 12 inches diameter and 100 feet deep. Powerful centrifugal engines, worked by portable engines, have been attached to these tube-wells. Working night and day for a week, with the pumps throwing between 400 and 500 gallons per minute, has demonstrated the suitability of the site selected. The total daily supply required is four million gallons, and it is calculated that six additional 12-inch tube-wells will easily provide this quantity of water, without unduly lowering the head of the springs at any one spot.

The quality of the water is pronounced upon analysis to be particularly pure. The permanent hardness is only 2.4. The softening process known as "Atkins's" will be employed, and considerable economy will be secured by manufacturing the lime necessary from the chalk on the spot. The water will flow from the tanks at Otterbourne to the existing reservoirs at Southampton Common. In the Parliamentary powers applied for, other districts have been included in the schedule.

The pumping-station has been visited by the Mayor, with thirty members of the Town Council, and several well-known engineers and geologists who are interested in the very satisfactory results that have been so rapidly obtained, the time occupied over the works having been only about six weeks.

## SANITARY WASHABLE WALL-PAPERS.

MESSRS. HEYWOOD, HIGGINBOTTOM, SMITH & Co., of 61 Watling Street, have just issued a new sample-book, composed entirely of washable papers, arranged in such a manner as to show at a glance the various fillings, dados, and borders *en suite*. It contains numerous and varied designs for halls, staircases, bedrooms, and other purposes, many of which are of great excellence and beauty. These papers, which are warranted *non-arsenical*, are impervious to water, can be readily washed, and possess the incontestable advantage of being remarkably cheap. Among those patterns which struck us as being most worthy of favourable notice were Nos. 3,120—a very pleasing "Japanese" design; 3,052—terra-cotta colour, in "Adams" style, with dado, filling, and border complete; and 37,278—a "willow pattern," which is especially pretty in the lightest colour. The extra cheap washable goods, printed on toned paper, will be found valuable as a preparation for the walls of new houses, which require to be left some time before papering with more expensive papers.

## THE COST OF A NAIL.

AN action has just been tried in Edinburgh in which a mason, named Borthwick, claimed 200*l.* from his employer, Thomas Ormiston, a builder, for damages. While the plaintiff was "pointing" the wall of a house near the station

at North Berwick, the plank on which he was standing gave way, and he fell from a height of 17 feet to the ground. He alleged that the accident occurred through a nail supporting the plank giving way, and that the nail, by the direction of the defender, had been driven into the wall at a spot where there was no sufficient hold for it. The defendant, in answer, stated that he supplied his workmen with proper materials for the scaffold, and that the accident must have arisen from the fault of one of his servants, and, he believed, of the pursuer himself. He accordingly denied liability, and also pleaded contributory negligence. After an absence of an hour and forty minutes, the jury, with consent of parties, gave a verdict by a majority for the plaintiff, assessing the damages at 75*l.*

## AUCTION SUMMARY.

For Week ending Feb. 14.

(See Advertisements.)

WEDNESDAY, 11th:—

Messrs. Fuller, Horsey & Co.—Engineering and Yacht Building Works, Erith.

THURSDAY, 12th:—

Messrs. Farebrother, Ellis, Clark & Co.—Freehold Building Site, Vauxhall.

## COMPETITIONS OPEN.

BEVERLEY.—Plans are required for the Beverley Dispensary and Hospital, for Accommodation for Twelve Patients, with Residence for Medical Officer, &c., cost not to exceed £1,500. Mr. Brigham, Dispensary, Beverley.

BRECON.—Feb. 9.—Plans are required for Altering the Town Hall. Mr. Rhys Davies, Borough Surveyor, Brecon.

CHELSEA.—Feb. 25.—Plans are invited for Additions to Vestry Hall. Premiums of 100, 50, and 30 guineas. Mr. J. Elsdell Salway, King's Road, Chelsea, Clerk to the Vestry.

## CONTRACTS OPEN.

ACLE.—Feb. 11.—For Building House at Methodist Chapel. Mr. Sidney Rivett, Architect, Southtown, Great Yarmouth.

AYR.—Feb. 10.—For Supplying and Fixing Gasholder. Mr. W. Smith, Manager, Gasworks, Ayr.

BATH.—Feb. 23.—For Supply of Glazed Stoneware Sewage Pipes and Gully Traps for twelve months. Mr. Alfred Mitchell, Engineer, Municipal Offices, Market Place, Bath.

BATLEY.—For Building five Terrace Houses, Bath Street. Mr. Walter Hanstock, Architect, Branch Road, Batley.

BEDFORD.—Feb. 24.—For Plans and Specifications and Execution of Works in connection with Sewage Pumping at Outfall Works. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.



BELFAST.—Feb. 14. For Additions to House. Mr. W. H. Lynn, Architect, Calendar Street, Belfast.

BERMONDSEY.—Feb. 24.—For Formation of a Lake in Southwark Park. Mr. J. E. Wakefield, Metropolitan Board of Works Office, Spring Gardens, S.W.

BLACKBURN.—Feb. 9.—For Widening Bridge over George Street, Construction of Retaining Walls, Earthwork, Ballasting, &c. The Engineer, Hunt's Bank, Manchester.

BLACKBURN.—Feb. 9.—For Construction of Station. The Engineer, Hunt's Bank, Manchester.

BLACKPOOL.—Feb. 7.—For Building Engine and Boiler-houses, Offices, and Carriage-shed for the Electric Tramway Company. Messrs. Horsfall & Williams, Architects, Post-office Buildings, Halifax.

BLAENYWAUN.—Feb. 28.—For Building Baptist Chapel. Mr. John Llewelyn, Brynllwelyn, St. Dogmell's, Cardigan.

BOLTON.—Feb. 9.—For Building Goods Warehouse. The Engineer, Hunt's Bank, Manchester.

BRADFORD.—Feb. 9.—For Building Sunday Schools at St. Mark's Church, Manningham. Messrs. Morley & Woodhouse, Architects, 15 Darley Street, Bradford.

BUILTH.—Feb. 7.—For Supplying Socket and Splay Junction Pipes. Mr. Evan Owen, Clerk to the Local Board, Builth.

BUNDORAN.—Feb. 25.—For Excavation of Channel in Rock (400 feet long), Construction of Boat Slip and Platform, Landing Quay (165 feet long), and Inclined Approach. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

CANTERBURY.—Feb. 11.—For Building Engine and Boiler-houses, Chimney Shaft, and other Works, Barton Mills. Mr. John G. Hall, Architect, 4 St. Margaret's Street, Canterbury.

CARDIFF.—Feb. 16.—For Building Printing Works and Offices, Westgate Street, for Messrs. D. Duncan & Sons. Messrs. James, Seward & Thomas, Architects, Cardiff.

CARDIFF.—Feb. 9.—For Building Workshops, Offices, &c., and for Construction of Gridiron and Berth for Offshore Floating Dock and Sea Wall. Mr. H. W. Butler, C.E., 35 West Bute Street, Cardiff.

CARDIFF.—Feb. 17.—For Construction of Wrought-iron Retort House and Coal Store. Roofs, Hydraulic and Foul Mains, Retort Fittings, Ascension Pipes, and Lime Shed Roof, also Annular Condensers with Syphons and Connections. Mr. H. Morley, Engineer, Gas Office, Cardiff.

CASTLE BROMWICH.—Feb. 16.—For Widening and Remaking Stetchford Lane (760 yards). Mr. W. S. Till, Borough Surveyor, Council House, Birmingham.

CHADDERTON.—For Building Six Cottages. Plans, &c., at 87 Denton Lane, Chadderton.

CHESHAM.—For Building Congregational Chapel and School. Messrs. W. G. Habershon & Fawckner, Architects, 28 Bloomsbury Square, W.C.

CHORLTON-CUM-HARDY.—Feb. 7.—For Construction of Pipe Sewer (1,700 yards). Mr. Joseph Swarbrick, Surveyor, Town Hall, Withington, Manchester.

COLCHESTER.—Feb. 11.—For Building Three Cottages, Crowhurst Road. Mr. J. F. Goodey, Architect, 2 Victoria Chambers, West Stockwell Street, Colchester.

COLE VALLEY.—Feb. 7.—For Construction of Third Section of the Cole Valley Sewers (2,000 yards run of 4 feet by 2 feet 8-inch Brick Sewer), with Manholes, Lampholes, Railway Crossings, &c. Mr. W. S. Till, Borough Surveyor, Council House, Birmingham.

CREWE.—For Construction of Bicycle Race Track, Erection of a permanent Wood Fence, and Enlarging the Pavilion. Mr. Furber, Architect, Hightown, Crewe.

CROYDON.—Feb. 9.—For Making Roads and Paths, Asphalted Yards, &c., at New Infirmary. Plan and Specification, by Messrs. Berney and Monday, Architects, at the Infirmary, Mayday Road, Croydon.

DARLINGTON.—Feb. 18.—For the Works in Building Central Passenger Station, including Platforms, Roofing, &c. Mr. William Bell, Architect to the North-Eastern Railway Company, York.

DUBLIN.—Feb. 11.—For Works of Sewerage and Water Supply on Hill and Town of Howth. Mr. Richard A. Gray, C.E., Fortfield House, Upper Rathmines.

DULWICH.—Feb. 26.—For Building Infirmary for the Guardians of St. Saviour's Union. Messrs. Jarvis & Son, Architects, 29 Trinity Square, E.C.

DUNDALK.—Feb. 14.—For Supplying the Clogher Valley Tramway Company (Limited) with 3,000 tons of 45-lb. Steel Rails (ordinary flat-foot railway form), with Fishes and Washers, and 90,000 Baltic Sleepers, 6 feet by 8 inches, creosoted. Messrs. Barton, Company's Engineers, Exchange Buildings, Dundalk.

EDINBURGH.—Feb. 11.—For Additions to Coltbridge Public School. Mr. R. Wilson, Architect, 2 Queen Street, Edinburgh.

EDINBURGH.—Feb. 18.—For Completion of Industrial Museum. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

ELGIN.—For Erection of Academy Buildings, Gates, and Railings, Messrs. A. & W. Reid, Architects, Elgin.

ELGIN.—Feb. 7.—For Additions to various Farm Buildings. Messrs. M'Bey & Gordon, Surveyors, Elgin.

ELTON.—Feb. 21.—For Building Stone Base, Pillars, Entrance Gates, &c., for proposed Recreation Ground. Mr. J. Cartwright, C.E., Borough Surveyor, Bury.

ELY, CARDIFF.—For Additions to Paper Works. Mr. S. Rooney, Architect, 16 Crockherbtown, Cardiff.

FARNWORTH.—Feb. 19.—For Construction of Bridge. Mr. W. Radford, 1 Princess Street, Manchester.

FENTON.—Feb. 18.—For Supplying and Erecting Sulphate of Ammonia Plant to Gasworks. Messrs. G. W. Stevenson & Son, C.E., 38 Parliament Street, Westminster, S.W.

Established 1820.]

INTERNATIONAL HEALTH

3 Silver and 4 Bronze Medals



[Telephone No. 3,525.]  
EXHIBITION, 1884.

Awarded for Sanitary Appliances.

**HENRY CONOLLY,**

LIMITED,  
MANUFACTURING SANITARY ENGINEERS,

Call the attention of Architects, Surveyors, and Builders to their Closets, the advantages of which will be readily seen by the accompanying Illustration.

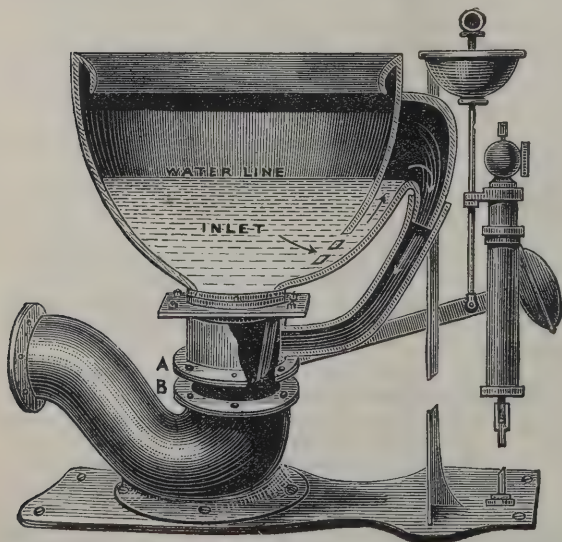
**THE "SAFETY" VALVE WATER-CLOSET,**  
WITH  
**Conolly's Reversible Trap (Patent No. 3,754).**

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

CAN BE SEEN IN ACTION IN NEW SANITARY SHOW-ROOM.

**53 & 55 Hampstead Road, 169 & 171 Drummond Street.**  
**WAREHOUSES—TOLMERS SQUARE, N.W.**





**FERRYHILL.**—Feb. 7.—For Building Superintendent's House, Porch, Boundary Walls, &c., and for Draining and Laying out Cemetery. Mr. Robert W. Thompson, Architect, Bishop.

**FORDINGBRIDGE.**—Feb. 10.—For Building Workhouse for 117 Inmates. Mr. Fred Bath, Architect, Crown Chambers, Salisbury.

**FORGNEY.**—Feb. 10.—For Alterations to School-house for Conversion into Glebe House. Mr. C. A. Owen, Architect, Molesworth Street, Dublin.

**GENERAL POST OFFICE.**—Feb. 12.—For Laying and Working Telegraph Cable to the West Coast of Africa from St. Vincent, Cape Verde Islands. The Secretary, General Post Office, E.C.

**HEMPSTED.**—Feb. 19.—For Works connected with St. Swithin's Church. Messrs. Waller, Son & Wood, Architects, 17 College Green, Gloucester.

**HEREFORD.**—For the Erection of a Cask Shed, 127 feet long by 40 feet, of Corrugated Iron, Wrought-iron Principals and Cast-iron Columns. Mr. W. W. Robinson, Architect, 21 King Street, Hereford.

**HOLBORN.**—For Taking Down and Rebuilding Nos. 13, 15, and 17 Gray's Inn Road. Mr. R. W. Crawley, Architect, 12 Trinity Square, Tower Hill.

**HOVE.**—Feb. 13.—For Construction of Storm-water Outfall and other Works. Mr. Ellice Clark, C.E., Town Surveyor, Hove, Brighton.

**HOWDEN.**—Feb. 20.—For Construction of Glazed Socket Earthenware Tube Sewers, part in Concrete, Cast-iron Piping and Gulleys, Brick Shafts, Ventilators, Flushing-doors, &c. Mr. A. M. Fowler, C.E., 1 St. Peter's Square, Manchester.

**HUDDERSFIELD.**—Feb. 11.—For Construction of Brick Sewer with Manholes, Lampholes, &c. Mr. R. S. Dugdale, Borough Surveyor, Town Hall, Huddersfield.

**IRVINE.**—Feb. 12.—For Construction of Timber Wharf at Harbour Quay. Messrs. Leslie & Reid, 72A George Street, Edinburgh.

**KING'S LYNN.**—Feb. 7.—For Construction of a Three-span Wrought-iron Lattice Girder Highway Bridge over the River Nar. Mr. E. G. Mawbey, Borough Engineer, King's Lynn.

**KINSALE HARBOUR.**—Feb. 17.—For Construction of a Pier at the Town Rock; Quay and Embankment from Cramer Street to Pier (1,740 feet); Embanked Approach Road from Main Street; and Construction of Boat Slips, Flights of Steps, Culverts, Fences, &c. The Superintendent, Harbour Works, Kinsale. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**KIRKBY OVERBLOW.**—For Heating (Hot-Water) Parish Church. Mr. Robert Burton, Pannal, near Harrogate.

**KIRKCALDY.**—Feb. 10.—For Supplying 1,780 tons of Dry Sand Cast-iron Pipes from 12 inches to 8 inches diameter. Mr. John Sang, C.E., Kirkcaldy, or Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

**LEEDS.**—For Building Detached House at Roundhay. Mr. John Hall, Architect, 59 Albion Street, Leeds.

**LERWICK.**—Feb. 21.—For Building United Presbyterian Church. Mr. Alexander Mitchell, Union Bank, Lerwick.

**LICHFIELD.**—Feb. 12.—For Extension of the Union Workhouse. Mr. W. H. Crompton, Architect, Horton Lodge, Lichfield.

**LISCANNOR.**—Feb. 25.—For Extension of the North Groin (60 feet), Deepening Harbour by Rock Excavation, Removal of Portion of Black Rock, Construction of Two Beacons, Boat Slip, and other works. Plan and Specification at the Office of Public Works, Dublin.

**LONG EATON.**—Feb. 16.—For Building School-room, Class-room, Out-offices, &c. Mr. John Sheldon, Architect, Market Place, Long Eaton.

**LONGFORD.**—Feb. 10.—For Erection of Farm Buildings, &c. Mr. C. A. Owen, Architect, 16 Molesworth Street, Dublin.

**LONGTON.**—Feb. 17.—For Constructing Telescopic Gasholder. Mr. J. M. Darwin, Engineer, Gasworks, Longton.

**MERTHYR TYDVIL.**—Feb. 13.—For Building Ward at the Workhouse. Mr. Thomas Roderick, Architect, 40 Monk Street, Aberdare.

**MILTON.**—Feb. 10.—For Repewing and Renovating Interior Walls of Parish Church. Rev. T. B. Robinson, Milton Rectory, Lymington.

**NEWARK.**—Feb. 12.—For Building Christ Church Parochial Rooms. Mr. Geo. Sheppard, Architect, 9 Kirkgate, Newark.

**NEW BRIGHTON.**—Feb. 12.—For Building Turnstile House and Boxes at the Landing Stage. Mr. A. Lowson, C.E., Great Queen Street, Westminster, S.W.

**NEWCASTLE-ON-TYNE.**—For Building Schools. Mr. Edward Shewbrooks, Architect, 2 Market Street, Newcastle-on-Tyne.

**NEWCASTLE-ON-TYNE.**—Feb. 7.—For Building Extensive Range of Shops and Show-rooms, Pink Lane. Mr. Wm. Glover, Architect, 16 Market Street, Newcastle-on-Tyne.

**NEW HEX, ROCJIDALE.**—Feb. 7.—For Building Shed for Spinning Company. Mr. Robert Evans, Architect, Royton.

**NORTHAMPTON.**—Feb. 12.—For Building Wesleyan Hall and School-rooms. Mr. H. H. Dyer, Architect, 42 St. Michael's Road, Northampton.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Construction of Works in connection with Widening Main Line from Manors Station to Heaton Junction (1 mile 40 chains). Plans and Specification to be seen by Feb. 2 next, at the Engineer-in-Chief's Office, Newcastle-on-Tyne.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Building Passenger Station. Mr. Wm. Bell, Company's Architect, York.

**NOTTINGHAM.**—March 4.—For Building Law Courts and Offices on Site of Old Cattle Market. Messrs. Verity & Hunt, Architects, 27 Regent Street, S.W.

**NUNEATON.**—Feb. 10.—For Building Shed for Steam Road Roller. Mr. C. Green, Surveyor, Nuneaton.

## SALES BY AUCTION.

**FOY, MORGAN & CO.** beg to announce that their Next PUBLIC AUCTION will take place on **WEDNESDAY, FEBRUARY 18, 1885,** at the **BALTIMORE SALE-ROOM,** Threadneedle Street, E.C., when they will offer their usual assortment of **DEALS, BATTENS, BOARDS, TIMBER,** &c. Catalogues will be issued in due time.

**FOY, MORGAN & CO.** {Wood Brokers, 108 Bishopsgate Street Within, E.C.

Sales for the Year 1885.

**MESSRS. BAKER & SONS** beg to announce that their SALES of LANDED ESTATES, Investments, Town, Suburban, and Country Houses, Business Premises, Building Land, Ground-rents, Reversions, and other Properties, will be held at the Mart, Tokenhouse Yard, E.C., as follows:—

Friday, February 27  
Friday, March 6  
Friday, March 20  
Friday, March 27  
Friday, April 10  
Friday, April 17  
Friday, April 24  
Friday, May 1  
Friday, May 15  
Friday, May 22  
Friday, May 29  
Friday, June 12  
Friday, June 19  
Friday, June 26  
Friday, July 3

Friday, July 10  
Friday, July 17  
Friday, July 24  
Friday, August 14  
Friday, August 28  
Friday, September 11  
Friday, September 25  
Friday, October 2  
Friday, October 9  
Friday, October 30  
Friday, November 13  
Friday, November 20  
Friday, November 27  
Friday, December 4  
Friday, December 11

Auctions can be held on other days besides those above specified.—No. 11 Queen Victoria Street, E.C.

**CROWTHORNE, BERKS, and BLACKWATER, HANTS.**

**H. J. E. BRAKE** will SELL by AUCTION, at the Royal Swan Hotel, Blackwater, Hants, on Monday, February 9, 1885, at Four for Five o'clock in the afternoon, about 80 acres of valuable FREEHOLD LAND at Crowthorne, Berks (a portion of which is covered with thriving Fir Plantation), in plots from a quarter of an acre to 12 acres each, and a few choice plots with frontages to the main road suitable for shops; also three valuable Building Plots adjoining the Royal Swan Hotel, Blackwater. May be paid for by instalments.

Plans, particulars, and conditions of the Auctioneers, Farnborough, Hants.

Auction Sales for 1885.

**MESSRS. GLASIER & SONS** beg to announce the following dates upon which they will hold SALES by AUCTION of LANDED ESTATES, Residences, Business Premises, Reversionary Interests, and Freehold and Leasehold Property generally, at the Mart, Tokenhouse Yard:—

Thursday, February 19  
Thursday, March 26  
Thursday, April 16  
Thursday, May 14  
Thursday, June 11  
Thursday, July 2

Thursday, July 23  
Thursday, August 6  
Thursday, October 2  
Thursday, November 26  
Thursday, December 10

They will be glad to receive early intimation of property intended to be included in any of the above sales. Additional sale days can be arranged to meet the convenience of clients.—41 Charing Cross.

### VAUXHALL.

On the Albert Embankment, in close proximity to the river. A Freehold Building Site of about 12,500 square feet, with extensive frontages to the road and pathway of the Embankment, close to Messrs. Doulton's Potteries and other large factories, eminently suitable for the erection of a warehouse, Public Hall, or business premises requiring space and a prominent and commanding position unequalled in the district.

**MESSRS. FAREBROTHER, ELLIS, CLARK & CO.** are instructed to offer for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Thursday, February 12, 1885, at 2 o'clock, the above valuable FREEHOLD BUILDING SITE.

For particulars apply to H. E. Brown, Esq., Solicitor, 22 Great George Street, Westminster, S.W.; or to Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, and 18 Old Broad Street, E.C.

To Land Companies, Building Societies, Speculators, and others.—Lavender Hill and Wandsworth Common, S.W.—A highly important Freehold Building Estate (land tax redeemed), comprising nearly nine acres, occupying a most commanding position, extending from St. John's Road to Wandsworth Common, to which it has together over 1,000 feet of frontage. The property is situate only a short distance from Battersea Park and Clapham Common, adjoining St. Mark's Church, within two minutes' walk of Clapham Junction Station, giving exceptional facilities of access to the City and all parts of town, while good service of trams runs close to the estate at frequent intervals. The land, which slopes gently towards St. John's Road, is almost the only property in the neighbourhood yet uncovered, and is in the midst of a locality where houses of a moderate class are in constant demand. It is ripe for immediate building operations, and possesses unusual advantages for development, its position being such as to enable the whole estate to be most profitably dealt with. Possession on completion of purchase.

**MESSRS. FAREBROTHER, ELLIS, CLARK & CO.** have received instructions to offer the above valuable FREEHOLD ESTATE for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Tuesday, March 17, 1885, at Two o'clock precisely, in one Lot.

Particulars, plans, and conditions of sale may be obtained of Messrs. Maples, Teesdale & Co., Solicitors, 6 Frederick's Place, Old Jewry, E.C.; of Sharon Grote Turner, Esq., Solicitor, 56 Lincoln's Inn Fields, W.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

The adjoining Freehold Property, as set out in the following announcement will be sold at the same time and place.

St. John's Hill, Wandsworth Road.—A valuable Freehold Property, ripe for building development, with an extensive frontage to St. John's Hill. This important site covers rather more than an acre, and is admirably circumstanced. There is at present on the land a detached cottage residence, with stable and outbuildings, and possession will be given on completion of the purchase.

**MESSRS. FAREBROTHER, ELLIS, CLARK & CO.** will SELL this valuable ESTATE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Tuesday, March 17, 1885, at Two o'clock precisely, in one Lot. Particulars, plans, and conditions of sale may be obtained of Messrs. Maples, Teesdale & Co., Solicitors, No. 6 Frederick's Place, Old Jewry, E.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

**FULHAM, S.W.**—A valuable Freehold Building Estate, comprising altogether over 13 acres, with three detached residences thereon, occupying a commanding position on in one of the main thoroughfares in this rising neighbourhood. It is situated only a short distance from Hammersmith Broadway and the new St. Paul's Schools, close to the proposed Hammersmith and Fulham recreation grounds, and almost adjoining the extensive cricket-ground in course of construction on the Baron's Court Estate, while it possesses unusual facilities of access, being within a few minutes' walk of five railway stations, and close to good omnibus routes. The land, which contains excellent gravel, and sand, possesses an extensive frontage to the Little Road, is ripe for immediate building operations, and forms one of the most important estates recently brought into the market in this locality. There are also two detached plots in Margravine Road, eminently suited for the erection of cottage property. Possession of the greater portion on completion of the purchase.

**MESSRS. FAREBROTHER, ELLIS, CLARK & CO.** have received instructions to offer the above important Estate for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Tuesday, March 17, 1885, at Two, in Two Lots. Particulars, plans, and conditions of sale may be obtained of Messrs. Few & Co., Solicitors, 19 Surrey Street, Strand, W.C.; of Messrs. Simpson & Collingford, Solicitors, 26 Gracechurch Street, E.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

Re Edward Grove, Esq., deceased.—Surrey.—Extensive and valuable Freehold Building Estates, in the parishes of Frimley, Chertsey, Kingston, Long Ditton, and Addlestone; and Meadow Land at Medmenham, Bucks.

**MESSRS. FAREBROTHER, ELLIS, CLARK & CO.** will offer for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., in May next, about 160 Acres of valuable LEATHLAND, situate at Frimley, Surrey, well adapted for building operations; 30 Acres of Building Land at Chertsey; 20 Acres at Addlestone, within one mile of the station; Tolworth Farm, Long Ditton and Kingston, comprising about 40 Acres, lying in an elevated position; and a productive parcel of Meadow Land at Medmenham, Bucks, containing 1a. 3r. 0p.—Particulars may be obtained as in preceding advertisement.

Lewisham. Second Portion of the Priory Estate.—Pleasantly situated, with important frontages to Lewisham High Road and the new roads leading therefrom; close to Ladywell Station, and within a short omnibus ride of Lewisham Junction Station, whence frequent trains run to the City and West End.—Freehold Building Land and fine old Mansion, which could be easily subdivided into two or three residences; also a very valuable tavern plot and a splendid walled-in kitchen and fruit garden, well stocked, and containing vineyard and forcing pits, &c. Easy payments. Free conveyances. Subsoil sand and gravel.

**MR. RICHARD J. COLLIER** having sold the whole of the first portion, will SELL by AUCTION, at the Plough Tavern, High Street, Lewisham, on Monday, February 23, at Six for Seven o'clock in the Evening, a further portion of this valuable estate, comprising about 50 lots of eligible FREEHOLD BUILDING LAND, free of title and land tax, including several capital shop plots and a magnificent site for a tavern; also the fine old mansion known as The Priory, and a well-stocked kitchen and fruit garden, with vinery, &c.—Plans and particulars may be obtained of C. A. Buss, Esq., Solicitor, 62 King William Street, E.C.; of H. Davis, Esq., 2 Arthur Street, East, London Bridge; at the place of sale; of the foreman on the estate; and of the Auctioneer, 28 Finsbury Pavement.

[For remainder of Auctions, see page xi.]



**OLDHAM.**—For Alterations and Additions to Vale Mills. Mr. Joseph Stott, Architect, 26 Clegg Street, Oldham.

**PENYCLAWDD.**—Feb. 12. For Restoring St. Martin's Church. Rev. J. P. David, Penyclawdd Rectory, near Monmouth.

**PORTO RICO.**—March 22.—For Supply of Dredging Apparatus. The Spanish Consulate-General, 21 Billiter Street, E.C.

**SHEFFIELD.**—Feb. 11.—For Construction of Main Sewers (3½ miles), part of Main Sewerage Scheme. Mr. Charles Gott, C.E., 108 Norfolk Street, Sheffield.

**SOUTHAMPTON.**—Feb. 12.—For Construction, in Brick, Cement, and Concrete, of Settling Pond and Lime Tank, at Pumping Works at Michelmarsh. Mr. J. J. Burnett, Secretary, South Hants Water Company, Guildhall Chambers, High Street, Southampton.

**SOUTH INDIAN RAILWAY.**—Feb. 10.—For Supply of 500 tons of Bridge Work, comprising Seven 150 feet Spans, and Eleven 40 feet Spans. Mr. Henry W. Notman, Managing Director, Company's Office, 55 Gracechurch Street, E.C.

**STONE.**—June 17.—For Improvement Works, Victor Street West. Mr. H. Fishwick, Clerk to the Local Board, Stone.

**SUNDERLAND.**—March 21.—For an Underground Hauling Engine. Mr. C. R. Barrett, Seaham Colliery, Sunderland. And for Winding Engine. Mr. F. S. Panton, Silksworth Colliery, Sunderland.

**TIGHNABRUACH.**—Feb. 7.—For Concrete Wall, Embankment, &c., for Reservoir. Mr. J. R. Thomson, C.E., Rothesay.

**TRIM.**—Feb. 7.—For Supplying and Fixing Iron Footbridge from Nurses' Residence to Hospital of Union Workhouse. Mr. John P. Davis, C.E., Trim.

**VENTNOR.**—Feb. 23.—For Construction of Promenade Pier and Landing Stage. Mr. H. E. Wallis, C.E., Palace Chambers, Bridge Street, Westminster.

**WALSALL.**—Feb. 14.—For Construction of Street and Outfall Sewers, together with three

Cast-iron Pipe Syphons under Canals, with Man-holes, Lamp-holes, Ventilators, &c. Mr. Arden Hardwicke, Borough Surveyor, Walsall.

**WEST CORNWALL RAILWAY.**—Feb. 24.—For Erection of Masonry of Penwithers Viaduct, near Truro. Plans at the Engineer's Office, Paddington and Plymouth.

**WESTMINSTER.**—Feb. 9.—For Supplying and Fixing Boiler at Baths and Wash-houses, 34 Great Smith Street. Mr. Warrington Rogers, Clerk to the Commissioners, 9 Victoria Chambers, Victoria Street, Westminster.

**WHITECHAPEL.**—Feb. 9.—For Works of Building at Goulston Square Baths, and for Construction of Two Swimming Baths. Mr. John Hudson, Architect, 8 Leman Street, Whitechapel.

**WINCHESTER.**—For Building Dwelling-house at St. Cross. Messrs. John Colson & Son, Architects, 45 Jewry Street, Winchester.

**WREXHAM.**—Feb. 11.—For Construction of Sewers. The Borough Surveyor, Guildhall, Wrexham.

**YORK.**—Feb. 16.—For Building Probate Registry. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

## TENDERS.

### ABERDEEN.

For Two Self-contained Houses in Fountainhall Road, Aberdeen. Messrs. ELLIS & WILSON, Architects, Aberdeen. Quantities by the Architects.

Buchan, mason.

Smith & Tolmie, carpenter.

Pirie, slater.

Masson & Findlay, plasterer.

Matthews, plumber and gasfitter.

Mason & Son, painter and glazier.

### BANGOR.

For Alteration of Old Buildings for College Purposes, and Erection of Building for Museum, &c., for the University College of North Wales, Bangor. Mr. DAVIES, Architect.

E. Williams, Garth . . . £1,189 0 0

R. & J. Williams, Upper Bangor . . . 840 0 0

THOMAS, Garth (accepted) . . . 637 0 0

### BEDWELTY.

For Building Cemetery Chapel, Caretaker's House, Boundary Walls, and Preparation of Site of Cemetery, Blaينا, Bedwelty. Mr. G. A. LUNDIE, Architect, Cardiff.

Pickthall & Son, Merthyr . . . £3,063 8 3

Williams . . . 2,979 9 7

McKay, Newport, Mon. . . 2,713 4 0

Morgan, Tredegar . . . 2,620 0 0

Jenkins Bros., Swansea . . . 2,410 0 0

Architect's estimate . . . 2,653 8 5

### BELFAST.

For Extension of Biscuit Factory in Donegall Street, Belfast, for Messrs. Marsh & Co. Mr. J. C. MARSH, Architect, 107 Donegall Street, Belfast.

Thompson . . . £1,477 0 0

Hogg . . . 1,381 0 0

M'Laughlin & Harvey . . . 1,269 0 0

Laird . . . 1,260 0 0

Kerr . . . 1,258 0 0

Lowry . . . 1,200 0 0

Todd . . . 1,200 0 0

Corry . . . 1,187 0 0

Smith . . . 1,140 0 0

Campbell & Lewry . . . 1,117 2 1½

FITZPATRICK BROS. (accepted) . . . 1,100 0 0

All of Belfast.

### DARLASTON.

For Construction of Earthenware and Cast-iron Pipe Sewers, Erection of Engine and Boiler-house, Tanks, Cottage, Filter-beds, Drains, &c. Mr. E. FRITCHARD, C.E., Engineer.

LAW, Kidderminster (accepted) . . . £13,991 0 0

## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"Sir,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it. Yours, &c.

"To Mr. Grundy." "JAMES WEIR, F.R.I.B.A.

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

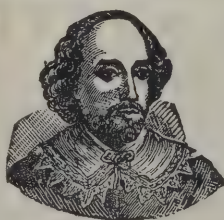
"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy,"  
From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy,"  
From F. J. Yates, Esq., Architect, Birmingham.  
"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City Road, London.  
Works—TYLDESLEY, near MANCHESTER.



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Shakespeare Steam Printing  
Works,  
COLMORE ROW,  
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## SERPENTINE. QUARRIES AND WORKS, POLTESCO, near the Lizard, Cornwall.

Estimates forwarded on application to the Proprietor.

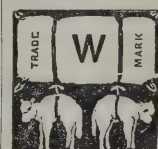
JABEZ DRUITT,

SOUTH GROVE, MILE END ROAD, LONDON.

Or the Manager at the Works.

Show Room for Chimney-pieces, 9 Castle Street, Holborn

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ORIGINAL MAKERS OF  
ARTISTIC WALL  
PAPERS.

FREE FROM ARSENIC.

PATENT EMBOSSED  
FLOCKS.

Dado Decorations, Embossed Leathers, Raised Flocks.

No Travellers Employed.

SOLE ADDRESS—110 HIGH STREET, near  
MANCHESTER SQUARE, LONDON, W.  
Fourteen Medals, including Gold Medal, International Health  
Exhibition, 1884.

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Sanitary Institute Medal, Exhibition, 1882.

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Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture  
Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH  
BODIES.

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## TO ARCHITECTS, BUILDERS AND CONTRACTORS.

## STEEL CUT NAILS!!

The modern and important discovery in the process of making Steel has so reduced the price, that Steel Cut Nails of the well-known "Mitre Brand" can now be supplied at only 1s. 6d. per cwt. more than the price of the ordinary Common Iron Cut Nails.

The Steel Cut Nails are far superior in quality and more uniform in size than any wrought or hand-made Nails yet produced, and being lighter in weight than ordinary Iron Cut Nails and free from wasters, they are found cheaper in actual use than common Iron Cut Nails at 1s. 6d. per cwt. less.

These Steel Cut Nails are specially suited for Builders, Joiners, Coopers, Packing-Case Makers, &c., and a single trial is sufficient to convince any one of their superior quality and cheapness.

## PATENT WROUGHT STEEL NAILS. OVAL WIRE NAILS.

Ask your Factor or Ironmonger for  
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WHOLESALE AND EXPORT ONLY.

FIRST-CLASS CERTIFICATE AND SILVER MEDAL  
AT CALCUTTA EXHIBITION.

BY HER  
MAJESTY'S



ROYAL  
LETTERS PATENT.

ESTABLISHED A.D. 1774.

## AUSTIN'S

NEW IMPERIAL PATENT

## SUPERFINE FLAX LINE.

The above article is now being manufactured and sold in large quantities for Greenhouse Sashes, Public-house Shutters, and other heavy work. The Manufacturers would recommend it for its strength, and the large amount of wear in it, consequent on its peculiar manufacture.

AUSTIN'S IMPERIAL PATENT FLAX SASH AND BLIND LINES (two Prize Medals awarded). The manufacturers of the above articles particularly wish to draw the attention of the trade to their Imperial Patent Flax Sash Lines, of which they are now making six qualities, all of which they can strongly recommend, as they have given unequalled satisfaction to the trade for now over One Hundred Years; and the Proprietors continue to give their personal attention to the manufacture of these goods.

They also invite the particular attention of the trade to their IMPERIAL PATENT BLIND LINES, which are very superior to anything yet offered.

They can be obtained of all Rope-makers, Ironmongers, Merchants, Factors, and Wholesale Houses in town and country.

N.B.—Please note that all our goods as advertised above are labelled, either inside or outside, with our Trade Mark—The Anchor.



**DEWSBURY.**

For Construction of 124 Market Stalls, Covers, and Fittings, Dewsbury.  
**CHADWICK & SONS, Staincliffe**  
*(accepted)* . . . . . £316 16 6

For Reconstructing Portion of Western Main Sewer, Dewsbury.  
**GARFORTH, Mirfield** *(accepted)* . £139 8 0

**EASTBOURNE.**

For Building Fire Brigade Station, Eastbourne.  
 Messrs. H. CARD & SON, Architects, Lewes.  
**WREN** *(accepted)*.

For Alterations and Additions, Stabling, &c., to Beau Site, Eastbourne, for Lady Howard de Walden. Messrs. H. CARD & SON, Architects, Lewes. Quantities by Mr. F. H. Humphreys, Hastings and Westminster.

Norman, Burgess Hill . . . £3,220 0 0  
 Smith, Eastbourne . . . . 3,139 0 0  
 Peerless, Eastbourne . . . . 3,017 0 0  
 Cornwell & Sons, Eastbourne . 2,965 0 0  
 DORE & SONS, Eastbourne *(accepted)* . . . . 2,916 0 0

*Hot Water, Heating, &c.*  
**FOSTER & PEARSON, Beeston** *(accepted)*.

*Conservatories.*  
**FOSTER & PEARSON, Beeston** *(accepted)*.

**GRAYS.**

For Alterations and Additions to London House, Grays, Essex. Messrs. PARR, STRONG, & PARR, Architects, Gravesend. Quantities by Mr. J. Edmeston Parr.

Carter, Grays . . . . . £1,182 0 0  
 Tuffee . . . . . 1,158 0 0  
 Woodward . . . . . 1,150 0 0  
 Wood, Chelmsford . . . . 1,130 0 0  
 Brown, Grays . . . . . 1,080 0 0

**LANCASTER.**

For Hydraulic Press, Pumps, Engine, and Boiler, for the Lancaster Corporation.  
**MILLS, Huddersfield** *(accepted)* . £245 0 0

**HALIFAX.**

For Building Three Houses, West Parade, Halifax. Mr. JOSEPH WILSON, Architect, Queen's Road, Halifax.

*Accepted Tenders.*  
 Fearnley & Firth, mason . . . £580 0 0  
 Halliday, joiner . . . . . 211 0 0  
 Nettleship, plumber and glazier . 23 0 0

**KEIGHLEY.**

For Street Improvement Works, Keighley. Mr. W. H. HOPKINSON, Borough Engineer.

Tempest, Keighley . . . £101 13 0  
**RHODES BROS., Shipley** *(accepted)* . . . 94 12 0  
 Engineer's estimate . . . . 95 5 0

**KILLRANELAGH.**

For Boundary Wall to Burial Ground, Killranelagh.

Reilly, Baltinglass . . . £200 0 0  
 Jackson, Baltinglass . . . . 150 0 0

None accepted.

**KNIGHTON (NEAR LEICESTER).**

For Constructing Brick Sewers (4,350 yards) and Pipe Sewers (13,200 yards), with Manholes, &c., Outfall Tanks, Pumping-house, Engines and Pumps, Irrigation Area, Fencing, Road-making, &c., Knighton. Mr. E. L. MILES, Horsefair Street, Leicester, Surveyor.

Pilling & Co., Manchester . . £15,500 0 0  
 Ward, Leicester . . . . . 14,000 0 0  
 Pattison . . . . . 13,859 13 4  
 Fawkes Bros., Southport . . 13,833 6 2  
 Young, Skegness . . . . . 13,427 0 0  
 Gibbons . . . . . 12,892 6 9  
 Cooke & Co., Battersea . . . 12,782 0 0  
 Bottoms Bros., Battersea . . 12,500 0 0  
 Jewsbury, Leicester . . . . 12,348 0 0  
 Smart, Trent Bridge . . . . 12,200 0 0  
 Cowdery & Sons . . . . . 11,896 13 2  
 Cordon, Burton Joyce Hall . . 11,500 0 0  
 Hill & Co. . . . . 10,955 0 0  
 Jones & Fitzmaurice, Birmingham . . . . 10,660 0 0  
 Dickson, St. Albans . . . . 10,206 0 0  
**HOUGHTON** *(accepted)* . . . . 8,670 0 0

**LEIGHTON BUZZARD.**

For Alterations to Heath Villa, Leighton Buzzard. Mr. FREDERICK GOTTO, Architect, Leighton Buzzard.

Whiting, Heath, Leighton Buzzard . £439 0 0  
 Miles, Heath, Leighton Buzzard . 397 10 0  
 Dawson, Linsdale, Leighton Buzzard . 385 0 0  
 Futt & Sons, Leighton Buzzard . 374 0 0  
 Garside, Leighton Buzzard . . 366 15 0  
 Edwards, Egginton, Leighton Buzzard . 359 0 0  
**WEBB, Leighton Buzzard** *(accepted)* . . 320 0 0

**LIVERPOOL.**

For Altering Offices, Lark Lane, for the Toxteth Park Local Board. Mr. J. PRICE, Surveyor.  
**CARRUTHERS** *(accepted)* . . £396 0 0

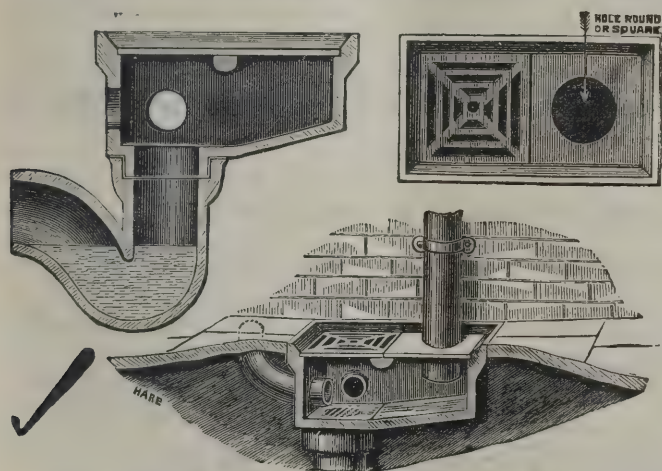
**LONDON.**

For Paving Works between Bloomsbury Street and New Oxford Street.

Beavers . . . . . £2,396 0 0  
 Williams & Wallington . . . 2,260 0 0  
 Cook & Co. . . . . 2,050 0 0  
 Nowell & Robson . . . . . 1,907 0 0  
 Griffiths . . . . . 1,878 0 0  
 Mowlem & Co. . . . . 1,780 0 0  
**TURNER & SONS** *(accepted)* . . 1,762 0 0

For Building Coal Store, Forming Drain from Laundry, and other Works at the South-Western Fever Hospital, Stockwell.

Ugle, Elland Road . . . . £663 17 0  
 W. & F. Croaker, Great Dover Street . . . . . 485 0 0  
 Lorden & Son, Upper Tooting . 457 15 0  
 W. & H. Castle, 17 Redcross Street . . . . . 447 0 0  
 Dean, Lavender Hill . . . . 444 6 0  
 Bell, Tottenham Wharf . . . 430 0 0  
 Howard, 32 Victoria Road . . 428 6 0  
 Stowell, 4 Albany Street . . . 427 0 0  
 Collmer, 68 Fleet Street . . . 425 0 0  
 Schofield & Co., 20 Bucklersbury . 354 0 0  
 Roberts, South Norwood . . . 346 0 0

**BELLMAN'S PATENT GULLY.**

This Gully possesses the following advantages:—

**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.**

**Avoids all Splashing.**

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The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

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DESCRIPTIVE CIRCULAR ON APPLICATION.

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**PRICE AT WORKS, 8/6 EACH.**

Also SINGLE GULLIES, for Sink Wastes only, price 3/9 each.

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**ART PLATES FROM "THE ARCHITECT."**

Proof Impressions of the following Illustration which has appeared in "THE ARCHITECT" can now be obtained in a separate form suitable for Framing:—

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|                           |        |   |   |
|---------------------------|--------|---|---|
| T. & F. Drake             | £3,939 | 0 | 0 |
| Patman & Fotheringham     | 3,873  | 0 | 0 |
| Falkner                   | 3,667  | 0 | 0 |
| Beasely                   | 3,660  | 0 | 0 |
| Evans                     | 3,600  | 0 | 0 |
| Garlick                   | 3,600  | 0 | 0 |
| Marsland                  | 3,555  | 0 | 0 |
| Parker                    | 3,339  | 0 | 0 |
| Pack Bros.                | 3,309  | 0 | 0 |
| RICHENS & WOMB (accepted) | 3,127  | 0 | 0 |

For Rebuilding No. 32, and Alterations and New Showroom to No. 34 Wigmore Street, W. Mr. ALEXANDER PAYNE, Architect, 4 Storey's Gate, St. James's Park, S.W.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Quantities supplied.    |        |   |   |
| Green                   | £3,447 | 0 | 0 |
| Messon                  | 3,100  | 0 | 0 |
| Baylis                  | 3,034  | 0 | 0 |
| Cox                     | 2,819  | 0 | 0 |
| Perry & Co.             | 2,738  | 0 | 0 |
| Longmire & Burge        | 2,650  | 0 | 0 |
| Boyce                   | 2,600  | 0 | 0 |
| MACEY & SONS (accepted) | 2,596  | 0 | 0 |
| Simpson & Son.          | 2,398  | 0 | 0 |

For Workshops, Lea Valley Works, Upper Clapton. Mr. J. HAMILTON, Architect.

|                   |      |   |   |
|-------------------|------|---|---|
| Woolveridge Bros. | £497 | 0 | 0 |
| Barton            | 489  | 0 | 0 |
| Hayworth          | 414  | 0 | 0 |
| Shurmur           | 378  | 0 | 0 |
| Scott             | 339  | 0 | 0 |
| Harper            | 307  | 0 | 0 |

For Rebuilding the Steamship Public-house, Naval Row, Blackwall. Mr. EDWARD BROWN, Architect, Hanbury Street, Spitalfields, E.

|                |        |   |   |
|----------------|--------|---|---|
| Anley          | £2,445 | 0 | 0 |
| Marr           | 2,390  | 0 | 0 |
| Shurmur        | 2,340  | 0 | 0 |
| Hawkins        | 2,215  | 0 | 0 |
| Jackson & Todd | 2,175  | 0 | 0 |

## LONDON—continued.

For Alterations and Additions to the Duke of Edinburgh Public-house, Upton Park, E., for Mr. W. Langman. Mr. FREDERICK A. ASHTON, Architect.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Wyles                   | £1,655 | 0 | 0 |
| Russell                 | 1,620  | 0 | 0 |
| Scott                   | 1,475  | 0 | 0 |
| Jackson & Todd          | 1,445  | 0 | 0 |
| Scotney                 | 1,398  | 0 | 0 |
| Simpson                 | 1,389  | 0 | 0 |
| Buckle                  | 1,360  | 0 | 0 |
| Brickell                | 1,300  | 0 | 0 |
| Nicholls                | 1,246  | 0 | 0 |
| HEARLE & SON (accepted) | 1,225  | 0 | 0 |
| J. & F. Bane            | 1,217  | 0 | 0 |
| Hall & Co.              | 1,200  | 0 | 0 |

For Alterations to the Three Pigeons Public-house, Romford Road, Stratford, E., for Mr. R. Kemp. Mr. FREDERICK A. ASHTON, Architect.

|                     |      |    |   |
|---------------------|------|----|---|
| Mayhew              | £293 | 0  | 0 |
| Buckle              | 185  | 0  | 0 |
| J. & F. Bane        | 175  | 10 | 0 |
| NICHOLLS (accepted) | 135  | 10 | 0 |

For Alterations in Ship Tavern Passage, Leadenhall Market, E.C. Mr. B. JOHNSON, Architect.

|             |      |   |   |
|-------------|------|---|---|
| McGregor    | £425 | 0 | 0 |
| Hammond     | 346  | 0 | 0 |
| Colls & Son | 321  | 0 | 0 |
| Morter      | 320  | 0 | 0 |
| Brass       | 317  | 0 | 0 |
| Nightingale | 297  | 0 | 0 |
| Rider & Son | 276  | 0 | 0 |
| Shurmur     | 270  | 0 | 0 |

For Erection of two Warehouses, Chiswell Street, Finsbury. Mr. J. GROOM, Architect.

|                 |        |   |   |
|-----------------|--------|---|---|
| Dove Bros.      | £5,225 | 0 | 0 |
| Shurmur         | 5,163  | 0 | 0 |
| Marsland        | 5,025  | 0 | 0 |
| Brass           | 4,920  | 0 | 0 |
| Mattock Bros.   | 4,887  | 0 | 0 |
| Grover          | 4,838  | 0 | 0 |
| Lawrance & Sons | 4,607  | 0 | 0 |
| Morter          | 4,483  | 0 | 0 |

## LONDON—continued.

For the Erection of a Depot in Elthorne Road, Upper Holloway, for Messrs. Carter, Paterson & Co. Mr. WM. EVR, Architect.

|                             |        |   |   |
|-----------------------------|--------|---|---|
| Aldridge & Jenvey           | £3,644 | 0 | 0 |
| Downs                       | 3,587  | 0 | 0 |
| Potter                      | 3,579  | 0 | 0 |
| Higgs                       | 3,430  | 0 | 0 |
| Morter                      | 3,426  | 0 | 0 |
| Perry & Co.                 | 3,416  | 0 | 0 |
| HARRIS & WARDROP (accepted) | 3,383  | 0 | 0 |

## MAIDENHEAD.

For the Erection of a Mission Hall, Well End, Maidenhead, Bucks. Mr. W. D. CHURCH, Architect, 12 South Place, Finsbury, E.C.

|                   |      |    |   |
|-------------------|------|----|---|
| Ward              | £458 | 0  | 0 |
| Snell             | 443  | 0  | 0 |
| Tinson            | 435  | 0  | 0 |
| Loosey            | 420  | 0  | 0 |
| Hunt              | 413  | 0  | 0 |
| Richardson        | 398  | 0  | 0 |
| CARTER (accepted) | 382  | 0  | 0 |
| Corbey            | 379  | 11 | 4 |

## PETERBOROUGH.

For Alterations and Additions to Cottage Hospital, Peterborough. Mr. J. W. WALSHAW, Borough Surveyor.

|                  |      |    |   |
|------------------|------|----|---|
| Barnsdale        | £190 | 4  | 0 |
| Marlin           | 180  | 0  | 0 |
| Gray Bros.       | 144  | 0  | 0 |
| HICKS (accepted) | 136  | 15 | 0 |

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## Accepted Tenders.

|  |  |
|--|--|
| Peacock, Scarborough, mason and plasterer. |  |
| Scales, Scarborough, joiner.               |  |
| Stephenson Bros., Scarborough, plumber.    |  |
| Wrightson, Scarborough, painter.           |  |
| Thornton, Bingley, slater.                 |  |
| Total, £4,151.                             |  |

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Janson & Co., Darlington . . . 584 11 6  
Ashmore & White, Stockton . . . 570 13 8  
Passman, Middlesbrough . . . 531 14 0  
Newton, Chambers & Co., Sheffield. . . . . 520 15 3  
Ridley, Middlesbrough . . . . . 503 7 4  
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Shand, Mason & Co., London . . 200 0 0  
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Bolton, Raunds . . . . . 139 0 0  
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# The Architect.

## THE WEEK.

AN addition has been made to the teaching power available for archæology and art in Oxford. The new Lincoln professorship has been filled, and Mr. W. M. RAMSAY has been selected for the appointment. The Professor has for his province the arts, monuments, coins, and inscriptions of classical antiquity, and Asiatic and Egyptian antiquities, and will have charge of the University collections of objects connected with his subject, as the Arundel and Pomfret marbles. Mr. RAMSAY has done good work in the Levant during the time that he held the endowment provided by the late Professor MONTAGUE BERNARD for the encouragement of research in Greece.

It has been often remarked that the sketches for M. BAUDRY'S paintings in the Paris Opera House are more satisfactory than the finished works. M. VERON endeavours to account for the difference by saying that in each of the sketches we have not one but several gestures simultaneously suggested, while in the painting one only can be seen. But much of the disappointment hitherto felt must be attributed to the lighting of the Opera House, which was productive of a rather sombre effect. The electric light has now been introduced in combination with gas, and, owing to the clearer illumination, M. BAUDRY'S paintings have assumed quite a new aspect. Groups which before appeared to be an indistinct mass, like the wrong side of a piece of tapestry, and of which the meaning had to be derived from engravings, now resolve themselves into most graceful figures, with a significance which all *habitués* can recognise. Visitors to the Opera will henceforth be able to say that the praise given to the paintings by artists has been fully deserved.

THE annual meeting of the Sanitary Assurance Association was held on Monday. It was stated that the work of sanitary inspection and issue of sanitary certificates had been continued on the plan initiated by the Association in 1881. The properties inspected during the year had been of the most varied character, including residences of every class in London and the country. In every case save one the sanitary arrangements had been found to be more or less defective. During the past year the Council had so altered its work in details as to materially reduce the cost of the inspections, the supervision of work, and the sanitary certificates both for London and the country. A reduced and inclusive scale of fees had been issued, with the result that the demand for the services of the Association had so much increased that, in spite of the reduced charges, the financial statement for the year showed a greater income than in 1883.

It was announced on Thursday that the Earl of ROSEBERY had been appointed First Commissioner of Works in succession to Mr. SHAW-LEFEVRE, who is now Postmaster-General. The Minister of Works may hope to have the gratification of concluding the arrangements for the new Government Offices. It is expected that the altered plans will be ready soon after Parliament meets. Lord ROSEBERY possesses great ability, and it will be all required if the duties of the office are conducted in the able manner of the late Minister. His lordship might, however, with advantage to the State, more often seek the co-operation of unofficial architects in Government works.

THE design of the colossal Forth Bridge which is now in course of construction does not give satisfaction to all mathematicians. A paper was read by Dr. SANG in Edinburgh on Monday night in which the author said that in regard to the structure of the truss, he was at variance with the designer of the bridge. The crossed bracings introduced new points, each of which must have its three determinants; but as the bracings were in pairs, and as no collection of even numbers could ever make an odd number, there must

always be either deficiency or redundancy. Solely from a geometer's point of view, the construction was inadmissible. This opinion was supported by other speakers. But it should be remembered that the Tay Bridge, which was destroyed by a storm that was not very severe, was essentially a mathematician's bridge. The Forth Bridge having been designed by Mr. BAKER, who is a practical engineer as well as a mathematician, has a better chance of enduring.

ONE of the ugliest churches in Great Britain is the Barony Church, in Glasgow. The only point of interest about it is that the expense of repairing it has corresponded with the ugliness. It is at length to be removed, and a more seemly building erected. A letter has been published which throws a light on the peculiarity of the design. JAMES ADAM was one day informed at a dinner-table that a church was about to be built. He immediately asked for the commission, saying that he had never been able to design a building in Scotland, while his brother ROBERT was fortunate in that way. He offered to prepare a design without charge. After considering the subject, JAMES ADAM professed to be in a difficulty, for if, as he said, he made a fine Gothic building, it might hurt the cathedral; and if he made one in a more modern style, it might hurt his brother's infirmary. Everything was, therefore, made as plain as possible. The modesty of the man in putting restraint on his genius for the sake of Glasgow Cathedral is amusing, and his belief that his Barony Church would, when complete, form a picturesque group with cathedral and infirmary has not been realised. The history of the building should be a warning to clergy and churchwardens against the adoption of gratuitous plans.

THE wall of London town has always been a puzzle to archæologists. On Monday a paper, by the veteran Mr. C. ROACH SMITH, was read at a meeting of the London and Middlesex Archæological Society, in which it was maintained that the wall was coeval with the enclosing of London by the Romans, that this was the original wall, and that what are called the "bastions" were built up against it when it was erected. On the other side, it was contended that the bastions were built at a period subsequent to the erection of the wall, out of the materials of older buildings, for the purpose of strengthening it. But is it not rather unusual for a Roman fortification to need strengthening?

THE Blue Book on Technical Instruction, which has just been published, is of much value. It is suggested in one report that in Ireland it would be an advantage to have in the chief city of each province art schools or academies on a large scale, with a permanent collection of pictures and objects of art. The principal should be an artist with an adequate salary. Travelling studentships should be connected with the school. There are many parts of England and Scotland where an academy of the kind is no less needed.

THE paper which has been read before the Society of Arts by Mr. C. G. LELAND, the American writer on education in industrial art, suggests that it is not impossible to have work done by youths and children in England, which will compete with the Swiss and German work. In America Mr. LELAND'S classes have been very fortunate. He relates that one pupil—a schoolboy of seventeen—made over 40*l.* by *repoussé* brasswork during two months of a holiday, and Mr. LELAND lately paid a boy of fourteen more than 3*l.* for work which he had executed after school in ten days. In the wood-carving class the wages were about 2*l.* a week. While every one must wish to see children give aid to their families, it must not be overlooked that work of this class is not perfect, and that the value of really good work is affected by it. We have known cases where a mere nominal price was given for excellent Swiss carving, which was the work of an artist no longer young, on the ground that purchasers could not help believing that it was made by the united labour of several children. In this country art industries have many obstacles in their way, and the number is likely to be increased by philanthropic experiments.



## AN EXPERIMENT IN ART EDUCATION.

THE village of Bushey, in Hertfordshire, has a claim on the interest of artists. It was there that Dr. MUNRO, a physician of the Adelphi, owned a country-house, to which promising young artists were invited, in order that they might have opportunities to sketch in the neighbourhood. THOMAS GIRTIN, TURNER, and WILLIAM HUNT were among them; and HUNT, who stopped for a month at a time, received from the doctor 7s. 6d. a day for his drawings. Bushey bids fair to have still more artistic interest, for at the end of the straggling village Mr. HUBERT HERKOMER, A.R.A., has set up an art school, which, considering all things, is the most remarkable in England.

It would, perhaps, be more correct to say that the school has been established for Mr. HERKOMER. We trust we are not offending the gentleman who has so generously imitated the example of Dr. MUNRO by divulging his name, but it is only fair to say that the entire expense of the buildings and maintenance has been borne by Mr. THOMAS ECCLESTON GIBB, whose name is known as the principal official in the large parish of St. Pancras, and as one of the first authorities in England on all questions relating to local government. It is not to be supposed that the school is a speculation of Mr. GIBB'S. We are so prone in England to imagine that every good deed must have been inspired by a hope of reward in coin of the realm, that it is not always easy to convince people that other men besides Mr. RUSKIN can be disinterested when they try to promote a love and knowledge of art in this country. It cannot, however, be too widely known that Mr. HERKOMER has not the slightest intention of receiving any share of the fees which may be paid by the students, and Mr. GIBB will be perfectly satisfied if the fees balance the outlay. When it is stated that the cost of nine months' tuition is eighteen pounds, and that the school is never likely to have more than fifty students, the sum to be divided, after all expenses are paid, need not excite the interest of the local surveyor of income-tax. The artist is rewarded by having an opportunity to become a teacher; while his friend finds more gratification from believing that an interesting experiment is being carried out with his aid than could be derived from an investment in stocks or shares. That the project should be undertaken by a vestry clerk and one of the busiest of painters, goes far to prove that the age in which we live is not so selfish as has been alleged.

Mr. GIBB and Mr. HERKOMER are next door neighbours, and the schools have been built on Mr. GIBB'S plot of ground. They are approached through a cloister which has been erected from Mr. HERKOMER'S design, and affords a pleasant walking place for the students. The rooms are large and lofty, and each of them is lighted in a different manner. The illumination of one at least of them might be described by the laureate's "fierce light which beats upon a throne and blackens every blot." A student who honestly paints the model as it is seen there will find that his work differs from the life studies in most schools. The light is one of the factors in the system of education. The end that is sought is apparently that the student should use his eyes rather than his memory, and paint what he sees before him, regardless whether the lights and shades correspond with his recollections of pictures or studies which have been produced under different circumstances. In order that the students may not become too familiar with one effect of light, they change from time to time into the other rooms. It is not every one who knows how to see, and the training of the student for the attainment of artistic vision cannot begin too soon. The mind as well as the eyes must be exercised, for what are all the mysteries of light and shade which give life to drawing and painting but simple deductions, which have to be produced by a sort of logical process?

The visitor to the Bushey School cannot fail to be struck by the absence of all that paraphernalia which one finds in the humblest school that derives support from the Science and Art Department. There are none of those casts of which the cost is a burden to a committee, and the care a task to an attendant, and which chill and cramp so many students. We are still afraid of colour in this country, and not so long ago we saw virtue in whitewash; characteristically the authorities try to foster our colour sense by filling

art schools with white casts, and send young men who are brought up in this way to teach the Easterns how to apply colour scientifically. In the Bushey School the living model is "the end all and the be all." Professional models are brought down and live on the premises for a week, to be succeeded by others. The risk that ensues from servile copying from one figure is therefore avoided. It may be mentioned that one cast is seen, the splendid *Teucer*, by Mr. THORNYCROFT, which a Greek might be proud to claim. It is Mr. HERKOMER'S desire to put similar examples of art before his students—not to be copied, but as a source of inspiration. He has no difficulty in obtaining them, and on the day we visited the schools the examples shown were some vigorous pencil drawings which had been sent from Herr MENZEL.

It will be objected that few students are competent to enter upon so advanced a course. The students are in fact picked, and are not allowed to continue in the schools unless their competency is evident. But it is by no means certain that it is necessary for a student to be able to draw in black and white equally well with a French lithographer before he is qualified to take up painting. Preliminary grinding is supposed to be the basis of all kinds of education in this country, and it is so effectual that a good many lose all desire for more of another sort. In an ordinary English art school the students are wearied long before the oil-painting stage is reached. "Paint your studies instead of drawing them," was the advice of REYNOLDS; "by a short struggle of resolute industry the same expedition is attainable in painting as in drawing on paper," and it is this principle which is recognised at Bushey. But we understand that the experiment of an elementary class, in which of course drawing will be predominant, is to be tried in a month or two.

As care is taken in the selection of the students, it may be expected that in a little time the school will be surrounded with that atmosphere of floating knowledge on which REYNOLDS, like all teachers, placed so high a value. It was valued by the President because he believed that by means of it "every mind may imbibe somewhat congenial to its own original conceptions." There is more chance of such a result being secured at Bushey from the versatility of the master than there was in the Academy in Pall Mall. Mr. HERKOMER can do so many things that one is induced to credit the stories which are told of the men of the fifteenth-century. He is a painter of portraits, figure pieces, and landscapes; a carver, an etcher, a mezzotint engraver, a wood-draughtsman, a smith, a metal-worker, and could make a living by music or lecturing. A man so varied is equal to a staff of professors, and is likely to discover almost by instinct what is most congenial to a student. If a young fellow whom Nature intended for a sculptor or an engraver enters the school as a painter, there is not much chance that he will lose his time in fighting against himself. He is brought into contact with art in so many forms that if a genius for one kind more than another lies hidden in him it is sure to be revealed.

The school has gained the good wishes of many English and foreign artists, and as an effort to secure for the English student whatever is best in the Continental atelier system, it is deserving of the success which its projectors have desired.

## LANDSCAPE IN ART.\*

EVERYONE who has read the books called "Cadore, or Titian's Country," and "The Dolomite Mountains," will welcome the new volume by Mr. GILBERT. The subject is of extreme interest, and has to do with much more than painting. It relates likewise to descriptive poetry and to the history of human development. In fact, an upholder of the theory of evolution could hardly discover anything that is more convincing to him than the difference which exists between the representations of landscape as they are found in ancient and modern paintings and poems. The architecture and sculpture of the Greeks are held to be superior to modern works, but it cannot be said that Greeks or Romans were more sensible to the beauties of

\* "Landscape in Art before Claude and Salvator." By Josiah Gilbert. John Murray.



nature than the English, or were better able to depict them by words, lines, or colours.

It is the object of Mr. GILBERT's book to explain the progress which has been made in the course of centuries in landscape art; but it seems to us that a comparison of two parallel passages from a Greek and an English poet will suggest the difference between the theories which inspired art and literature then and now. Let us take first the "Prometheus" of ÆSCHYLUS. The victim in his soliloquy, after he is bound to a mountain in the Caucasus, cries out:—

Ethereal air, and ye swift-winged winds !  
Ye rivers springing from fresh founts, ye waves  
That o'er the interminable ocean wreath  
Your crisped smiles, thou all-producing earth,  
And thee, bright sun, I call, whose flaming orb  
Views the wide world beneath, see what, a god,  
I suffer from the gods !

This invocation is fine, and to a Greek who heard it spoken on the stage, earth, air, and water became powers endowed with life. But now let us see how SHELLEY in his "Prometheus" treats the scene:—

The point of one white star is quivering still  
Deep in the orange light of widening morn  
Beyond the purple mountains : through a chasm  
Of wind-divided mist the darker lake  
Reflects it : now it wanes : it gleams again  
As the waves fade, and as the burning threads  
Of woven cloud unravel in pale air :  
'Tis lost ! and through yon peaks of cloudlike snow  
The roseate sunlight quivers.

It may be said that an audience could follow the Greek tragedian's description, while SHELLEY's has to be read more than once before all its beauties can be realised. It is not, however, dramatic fitness that comes in question. What we contend is that the invocation of ÆSCHYLUS is a type of what is found in Greek literature, and that although a factitious animation is given to phenomena, all that form and colour which constitute a landscape are ignored. Colour is so rarely recognised that there is some ground for starting the theory that the Greeks were colour blind. The low condition of landscape painting in the palmy time of Greek art may be inferred from a passage in the "Critias" of PLATO, in which he says that people are satisfied with the most distant resemblance to mountains, rivers, and forests, and that nobody either examines or criticises paintings of the kind. In other words, the Athenians were satisfied with scenery which, if reproduced in a modern pantomime, would be hissed by the spectators in the gallery. Dr. WOERMANN has concluded from allusions in one of the tragedies, that the deep and delicate feeling for nature which is found in the poetry must have been aided by the resources of the painter's art. But in respect of landscape-painting the Greek spectators do not appear to have been in any better condition than those in an Elizabethan theatre, who were expected to piece out the imperfections of the stage by their thoughts.

The Pompeian landscapes probably show a very advanced state of Greek art. Mr. GILBERT deals gently with the imperfections, but he has to own that the rocks are lumps of matter, that clouds are omitted, and that there is no trace of trees like the stone pine which was to be seen about the city. The artists were evidently most dexterous in producing their pictures, and their shortcomings are less excusable. The Pompeian wall painters were aware of the importance of affording pleasure to the eye, and, accordingly, "it is pleasant habitable scenery that is preferred for decoration, telling of the time when the Italian people, all the world their own, dwelt at ease amidst fields and groves and vineyards, and along the sunny strands of their own Italy, busy with nets and boats enjoying the cheerful scene."

The trees which are found on the walls of the villa of Livia are signs that landscape-painting of a somewhat veracious kind was produced in Rome. The work was intended to suggest a garden; the branches of the trees are interwoven, forming a kind of trellis, and "the whole is painted with a vigour, precision, a glow of colour, and a clever cast of light and shade which are simply amazing." A wall-painting which survived at Palestrina until the seventeenth century, but is now known only

by means of an engraving, is supposed to represent a Nymphæum, or haunt of water deities. It is simply a collection of fantastic rocks and buildings, but it must have been interesting as an early example of a kind of manufactured landscape which prevailed in Europe until comparatively modern times. Works of this class can always be useful to geologists who are desirous to show the consequence of ignorance of their science. In the pictures from the "Odyssey" found on the Esquiline in 1848, and which are now in the Vatican, there is more of this ancient rockwork, combined with a clearer recognition of landscape effect, but the conclusion has to be drawn by Mr. GILBERT that "the spirit of nature in her finer moods, the play of light and shade and colour, the witchery of cloud effects, the pathos of evenings and mornings, of spring-tides and autumns—to apprehend all this and to give it pictorial expression was reserved for the art of the modern world."

It is remarkable that, in the writings of the Greek Fathers, HUMBOLDT found passages which express delight in natural scenery. CHRYSOSTOM anticipates COWPER in preferring nature to art, and bids his hearers to turn aside from the glittering buildings with their ranges of columns to the fields and the sky. The pastoral images in the New Testament which are depicted in the Catacombs might be considered as likely to lead to the creation of a class of art among the early Christians, in which landscape would assume more importance than an accessory to figures. A tree in St. Vitale at Ravenna of the sixth century shows, according to Mr. GILBERT, who has examined it with a glass, undeniable study of nature; "but the foliage is composed (like that of Greek sculpture) of large single leaves, similar to those of the sweet chestnut, showing, along with a certain faithfulness to nature, great lack of the power to generalise; the Classic freedom of foliage is gone." In the scenes which were represented, part of the action at least often takes place in the sky, but the artists completely failed in their attempts to suggest the appearance of clouds.

The early illuminators were as conventional as the mosaicists, and the trees were sometimes not unlike those which are found among Swiss toys of the cheapest class. Then the art fell into the hands of the Celts and Germans. We have always maintained that the origin of the interlaced ornament which is known as Scandinavian or Celtic, was among the monks who were adorning manuscripts. It is a style which is more likely to arise with men who were under no restraint from intractable materials, and could allow their fancy to run into elaborate intricacies of form, than with metalworkers or carvers of ivory or stone. Mr. GILBERT is of the same opinion, and describes the art as "elaborate ornamental penmanship, in forms derived in the first instance from those primitive combinations of plaits, knots, and chequer patterns which belonged to ancient needlework." In course of time the artists attempted the representation of flowers, and there are occasional examples of trees which appear to have been drawn from life. In a Bible of the ninth century in the British Museum there are trees which are "eminently natural," along with others which are unlike anything that ever grew. The difference may have arisen from the employment of several monks on the work. With the rise of Gothic architecture it was inevitable that the example of carvers who went to the fields for patterns should gradually lead to the abandonment of stereotyped forms among the miniaturists. For the diaper background a sky was substituted, and landscape forms were introduced. The struggle with conservatism, which marks all times of transition, can be seen in a fourteenth-century Bible in the British Museum. In the drawing of *Jacob Wrestling with the Angel* there are trees and grass, with a red diaper background. In the *Translation of Elijah*, the prophet in a four-wheeled cart, which is drawn by two horses tandem, ascends from the earth, not into a blue sky, but into chequers. On the abandonment of diapering, the French seem to have adopted skies which were intensely blue, while the Flemings used tender and more aerial tints. Artists of both nationalities appear to have been employed on the illustrations to the poems of CHRISTINA of Pisa, in the Harleian Collection, which are considered to present some of the earliest specimens of genuine landscape painting. In this manuscript, and others of the time, one feature is the peculiar rows or frill forms which do duty for clouds. It has been suggested



that they are allied to the heraldic nebuly or wavy lines which we see on some shields. They are so characteristic of Gothic art that Mr. BURGESS employed them to express clouds in some of the sculpture in Cardiff Castle.

For a long period the landscape-painting of Europe might be said to be as conventional as heraldic figures. The rocks, trees, clouds, have as much relation to nature as supporters have to real animals. Even when the figures were derived from living beings, it was not considered necessary to go to the fields for a background. It was not until the sixteenth century that the revolution was commenced which is still in progress.

(To be continued.)

### THE ARCHITECTURAL ASSOCIATION.

THE ninth ordinary meeting of the Association was held on Friday evening, the 6th inst., Mr. Cole A. Adams, president, in the chair.

Mr. ATKIN BERRY, hon. secretary, said that he had given away all the tickets he had received for the course of lectures at Carpenters' Hall, but thought there would be no difficulty in getting tickets for any of the lectures following Professor Kerr's of the 11th inst.

Mr. A. YOUNG then read a paper, from which the following is taken :—

#### Farm Buildings.

Mr. Young said :—Having arranged the yards, the next point to take into consideration is the aspect, as it is essential to place the buildings so in relation to the crew-yards that the stock fattening shall get the benefit of all the sun that can be obtained, and be sheltered from the cold winds. The buildings should, therefore, be on the northern and eastern sides of the yards, and the sides to the south and west left open. The level of the yard should be about two feet below the level of the stable pavement, and should be made as impervious as possible by well ramming and clay puddling so as to keep the straw-bedding, &c., in the yard as "good" as possible. In the yards provision should be made for drinking-water for the stock, and if this can be running water so much the better; for an overflow pipe to keep the yard sufficiently drained is a necessity. In disposing the various buildings round the yard, it is best to place the following within easy distance of the farmer's house or bailiff's cottage: the nag-stable, gig-house, and harness-room, the calf-house, and the infirmary box. About 18 feet by 14 feet is a good average size for the gig-house, and about half that width for the harness-room. A small loft is usually arranged over in which a small supply of corn is kept, along with apples.

Taking the buildings in the rotation plan before us, we next come to the calf-house, which, in an ordinary way, is simply a large box about 18 feet square, with a low manger on three sides, divided up by wooden palings into pens of about 6 feet square. In larger buildings it will sometimes form a detached building, with, perhaps, a tramway running down the centre for convenience of feeding, with the pens on each side, and a gangway all around of about 4 feet. With this arrangement the floor is sometimes sunk about 2 feet 6 inches, and I have seen a very simple and ingenious contrivance for altering the height of the manger daily as the bedding gradually becomes raised, so that the calves can get at their food without difficulty, but an ordinary iron trough answers all practical purposes. The internal temperature of the calf-house should be kept as even as possible, and it is better to build them with hollow walls. I need not add that no loft for hay or any other fodder should be placed over any cow-shed or similar building, as the hay is not by any means improved by the exhalations of the cattle, and the risk of fire is intensified. The most impervious floor is the best, and I advise any of the many forms of Portland cement concrete—whether called granolithic, imperial stone, or Wilkinson's patent concrete, is immaterial—so long as the cement is really good and the granite chips and shingle clean. I can speak in high terms of Wilkinson's work from practical experience.

The cowhouse may next be described. It is a great point here, as well as in the calf-house and stable, to insure an equal temperature and perfect ventilation. Where the buildings are of brick, hollow walls will be of great assistance, care being taken to have a thoroughly effectual damp-course of slates in cement and two or three courses of brickwork, also cemented under, to keep out the mice and rats, the great enemies of the farmer, as far as his buildings are concerned. The usual width of a cowhouse is about 18 feet; this allows of a feeding-passage at the back of the mangers of 4 feet. The floor should slope very slightly towards the heels of the cows, and there should then be a drop of 4 inches into a surface-gutter about 1 foot 6 inches wide, and the remainder will form the usual gangway.

It is not necessary to divide the building up into stalls, but it is better to do so at the manger. This is done in the simplest way with oak paling. The mangers should be constructed of some hard and impervious material. There are very good purposely-made glazed terra-cotta bricks for this purpose. Hard blue Staffordshire bricks also do very well, but one of the simplest and best mangers is formed by using the large-sized half pipes, of glazed stoneware used for drainage works, bedded on concrete, and having an oak capping. The joints are fewer and easier made than with the other materials mentioned. Again, the simplest methods of ventilation are the best, and the system I recommend is to carry up a large trough of wood, about 2 feet 6 inches broad at the base, gradually decreasing to about 1 foot 3 inches at the outlet, and having a plain cap at the top. The sides should be formed in two thicknesses, and the spaces between filled with sawdust. Sufficient air will find its way in by the door and windows to thoroughly change the air in a very short time. One ventilator in about every 15 feet of length will suffice. The doors of a cowhouse should always open outwards, and should not be less than 4 feet wide; 4 feet 6 inches is a better width, and sliding doors are best. But here again the question of cost will probably intervene. I may say here that it is better, if possible, to use nothing in the way of hinges or bolts, &c., except the strongest, and those only that can be made or repaired, if necessary, by the village smith. Avoid complicated patents. The windows should be placed at such a height that if the upper portion is glazed it cannot be reached by the horns of the stock in the yards. The old-fashioned hit-and-miss window, strongly made in wood, is as good as anything, and if with a small quantity of glass over will answer every purpose. Where the glass is omitted in the windows, a few glass slates or tiles in the roof will be of use. Cast-iron hit-and-miss windows can be obtained from many founders. The cost of one, 3 feet 6 inches by 2 feet 6 inches, will be about 25s., list price.

We next take in hand the stable. There is little to say about it that has not already been mentioned in describing the cowhouse. The stall divisions, which should be about 9 feet deep, should be about 6 feet 3 inches apart centre to centre, and should be thoroughly strong; the mangers should be much as described for the cowhouse, but one must bear in mind that the horse is rather a dainty feeder, and has a very strong objection to dirt. Therefore, to avoid waste it is a good thing to have the mangers of some materials easily kept clean, and here, again, any strong glazed ware will be found the best. A cart-horse stable should be, at least, 18 feet wide, and that dimension is quite sufficient. But it must be borne in mind that the harness, &c., is frequently kept in the stable (although this is a bad thing to do), and provision should be made for, at any rate, temporarily placing the saddles, &c., on rests until they can be put away in the gear-house.

As regards ventilation, the same as I described previously for the cowhouse will answer admirably. Avoid, if possible, any cross draughts, and if you are obliged, as may sometimes happen, to put either windows or ventilators in the same side as the mangers, keep them as high as possible. I do not think, even in the best stables, it is a good thing to lay on water to the drinking-pot forming part of some iron mangers. A horse will drink with much greater zest from a freshly-drawn bucket of clear water than from a slimy trough that may have been standing for days, and it is more natural for a horse to drink from the ground-level and not from a raised trough; he can get his nose much better into the bucket. If you are compelled, from motives of economy or want of space, to place lofts for hay or corn over the stable (only do so when you are absolutely obliged) be sure and have the loft-floor of cement. The old plaster floors cannot be beaten for this purpose as they are rather warmer than a Portland cement concrete; but in ordinary farm buildings it will rarely happen that you will have to place lofts over any of the buildings, but in hunting-stables and those attached to country houses the architect is obliged to put his lofts on the upper floor, and this arrangement has many conveniences; but, wherever possible, put lofts over coach-houses, harness-rooms, &c., and only put a passage for service over the stable. I fancy, as a rough rule in large stables, about half of the superficial area of the stable would give the requisite amount of floor-space for the lofts. Mice are troublesome amongst the corn. It is a good thing, where they are very destructive, to cover the floor and line the walls with thin zinc. The harness and gear-house should be placed as near to the stable as possible, and should be about 8 feet wide, and should have a fire-opening and flue, as here the farm labourers who are not boarded occasionally sit to take their "bit on the thumb," and it is frequently useful to be able to make up a fire quickly to heat a bran-mash or boil food for the pigs; and a fireplace here saves a journey to, and gossip in, the farm-kitchen. Harness fittings should be of the strongest and rudest description; there is nothing better than strong oak pegs, built well into the wall. The gear-house should have a good-sized window.



A small space should also be provided for storing, under lock and key, artificial manures and oil-cake. The floor of this department should be of wood, with about half an inch between each board, and plenty of ventilation under, as oil-cake very quickly gets mouldy, and requires to be kept in a dry and well-ventilated place. Between the stable and the cow-house is the best situation for the root and chaff-cutting place; in small farms an area about 12 feet by 18 feet will do, but in larger ones these dimensions should be increased. As the roots will probably be stacked and bedded on the opposite side of the stable range to the crew-yard, it is necessary to have a door at both ends of the building. In the ordinary way, of course, the machines will be worked by hand, but on large farms, and in other cases where steam-power is used for other purposes, the chaff-cutting, pulping, &c., will be done by steam-power. In this set of buildings the same engine, one of about 10 horse-power, drives, works the sawing-machine, and also does the chaff and root-cutting, &c., the gearing being interchangeable.

The barn, now partly I suppose by the greater facility with which farmers now dispose of their produce, and partly also from the fact that much that was formerly placed in the barn is now kept in separate places, is generally built very much smaller than used to be the case. Thirty-five feet to 50 feet by 20 feet will nowadays be considered a good barn. It is usual to put the doors of such size that a waggon can be driven through it, and about a third of the barn has a sort of loft over. Cement makes the best floor, and it is a good thing to render the walls in cement for about 5 feet in height all round. Sufficient ventilation is gained by putting a few air-slits, which should be covered with bird-netting to keep out intrusive sparrows.

The PRESIDENT observed, in regard to the depression of the times, that the construction of farm buildings had of late years been studied from a more scientific point of view, with the object of erecting them in the most economical manner, and so as to give the maximum of accommodation and usefulness in a minimum of space. The President further added some remarks explanatory of a dairy farm which he had carried out, a plan of which was exhibited by Mr. Young.

Mr. W. H. PRATT proposed a vote of thanks to Mr. Young for his paper. He inquired if concrete cement paving answered in stables, and whether it afforded sufficient foothold to horses. Farm buildings in their simplicity and picturesqueness had a claim to the interest of an architect, even though few might be called on to design them. He said he should be very sorry if the cutting-up of holdings led to the adoption of one uniform pattern for all farm buildings. There was nothing particularly picturesque about model farms, and they would considerably mar the beauty of any fine scenery in which they might be erected.

Mr. H. G. TURNER seconded the vote of thanks. He said his experience as to concrete floors was that they answered perfectly, gave a good foothold to horses, and were cheap. As to constructing farm buildings of concrete, it might answer if they had to put up farm buildings all over a large estate, as a set-off against the cost of the plant necessary, and the trouble of getting men accustomed to this particular work.

After some remarks from Mr. Blagrove and others, the vote was carried by acclamation.

Mr. YOUNG, in his reply, remarked that no farm buildings could be more picturesque than a group of Sussex farm buildings. Picturesqueness must, under the circumstances, be got from the utmost simplicity of construction. But, of course, if one had to lower the roof pitch, and the like, all picturesqueness would be lost.

## THE GLASGOW INSTITUTE OF FINE ARTS.

THE twenty-fourth annual exhibition of the Glasgow Institute of Fine Arts has been opened. The president, Sir Peter Coats, to celebrate the event gave a banquet, at which several artists were present. The duty of proposing "The Glasgow Institute of the Fine Arts" was assigned to Professor Jebb, of Glasgow University, who spoke as follows:—

In rising to propose the toast with which I have had the honour of being entrusted, I am very conscious, indeed, that it could have been proposed with far more knowledge and ability by gentlemen whom I see here to-night, and to whom I should have been prepared to listen. I will frankly say that I feel very much gratified at the same time by having been asked to propose it, and that it gives me peculiar pleasure to do so, not only for a personal reason, but also for a reason associated with the ancient Glasgow Institution with which it is my privilege to be connected. In days long gone by—in the last century—Glasgow College, at its old home in the High Street, was the scene, I believe, of the earliest art exhibition ever held in Glasgow; and now that the opportunities for the display of art among us have attained a development as much in advance of

those early attempts as the Glasgow of the present has surpassed the wildest dreams which could have been formed for the Glasgow of the past, it must naturally be a source of especial pleasure to any one connected with the university of this city to take a part, however small, in congratulating our host, the president, and his colleagues in the administration of this Institute on a success which the walls of these noble galleries declare in tones more eloquent than speech. The Institute was founded in 1861 for the purpose of promoting the knowledge and enjoyment of art throughout the West of Scotland, and it has endeavoured to attain that object especially by means of its annual exhibitions. This exhibition is, as you are aware, the twenty-fourth of the series. It is probably safe to say that there is no exhibition out of London in which the general quality of the work exhibited is higher than in this Institute. The labours which the honorary officers of this Institute have now conducted so unselfishly and so efficiently for well-nigh a quarter of a century are, I will venture to affirm, among the most patriotic and beneficent labours that any body of men could undertake. They have not been ministering merely to the pleasure of the wealthy and cultivated few; they have been doing an educational work of the highest value to the community at large; and a work I believe it might be added which, in certain respects, has no unimportant bearing on the manufacturing interests of this great city. There never was a time in the world's history, probably, when the soothing influences of art were more needed than they are in our day. You may, perhaps, remember the lines in which Mr. Matthew Arnold describes the great German poet's feeling about art in the years when the eighteenth century was drawing to a stormy close amid the perturbations, political and intellectual, of an age which had suddenly broken so many of the links with the past:—

He looked on Europe's latter hour  
Of fitful dream and feverish power;  
He said, the end is everywhere—  
Art still has truth—take refuge there.

The nineteenth century is drawing to its close under different and happier conditions. Art is no longer needed, in Goethe's sense, as the refuge of political and speculative despair. We look back on a period memorable for the wonderful changes which the discoveries of science have effected in the material life of man; but these very changes have made life more rapid, more exciting, and more exhausting. Day after day that electric chain with which the world is, in no figurative sense, bound vibrates with all tidings that can stimulate the brain and stir the heart. Is it necessary to say more, when we all know the emotions of honour and indignation against enemies of the human race—the feelings of pride in our unsurpassed heroes, and of sorrow for the brave dead which the last few days have brought? If the world no longer needs art as a refuge, it needs it more than ever as an ideal region of repose and refreshment, in which the weary brain may find relief and the jaded nerves may regain their elasticity. Nothing speaks more significantly for this Institute than the fact that Glasgow has now a local school of painting, and that gentlemen representing it hold so many places of honour among the artists of Britain and the Continent, whose works adorn these walls. It may be permissible in addressing this distinguished audience to re-echo a hope which is very generally felt, that the local school may receive its due share of local encouragement. The President of the English Royal Academy referred the other day to the sincerity of Scottish art. If that is one of the qualities of the Scottish artist, the co-relative quality in the Scottish connoisseur should be independence of judgment. Art criticism has done much excellent service in disseminating a knowledge of the principles of art. But the educated public of this country have now reached a stage, in matters of art, at which what is needed is rather, perhaps, more courage in the exercise of intelligent private taste. If one admires a picture, one ought not to be afraid of saying so; and it is also well to remember what Dryden said—"They mistake the nature of criticism who think that its business is to find fault." In art, as in literature, the picking of holes is not criticism; the higher and better office of criticism is to appreciate what is good or hopeful in work, pointing out, when needful, how it can be made better still. Speaking on the banks of the Clyde, and in the neighbourhood of the Trossachs, I cannot help recalling some eloquent words of the greatest living English art critic, because they nobly express that eternal alliance between the beautiful and the useful which in a great commercial city like Glasgow it is always well to remember, "the strong torrents which in their own gladness fill the hills with hollow thunder and the vales with widening light have yet their bounden charge of field to feed and barge to bear; the fierce flames to which the Alp owes its upheaval and the volcano its terrors temper for us the metal vein and warm the quickening spring; and for our incitement, I say not for our reward—for knowledge is its own reward—herbs have their healing, stones their preciousness, and stars their times." But



I fear that I have already incurred the charge of neglecting an art, which, if not exactly a fine art, has some points of analogy with it—the art of brevity. In conclusion, then, I will only venture to express my strong sense of the debt which all lovers of art in the West of Scotland owe to the president of the institute, Sir Peter Coats; to the secretary, Mr. Robert Walker; to the treasurer and to the council for the sustained efforts which they have so unselfishly devoted to the interests of art, and which have produced the admirable results which we see around us this evening.

### FYVIE CASTLE.

AMONG the Scotch properties which have recently been brought into the market, says a correspondent of the *Times*, not one, perhaps, has been more worthy of notice than Fyvie, which is now being offered for sale. Aberdeenshire is rich in fortified baronial residences of more or less pretensions. Fyvie Castle is by far the noblest of them all. In fact, with the solitary exception of Glamis, there is nothing in Scotland that is finer in the style. Originally a strongly-fortified quadrangle, there are now only two sides of the square remaining, but with the great additions which have been made by successive occupiers each side presents an imposing front. Billing, in his "Baronial Antiquities," goes into raptures over the place. He calls Fyvie "one of the noblest and most beautiful specimens of the rich architecture which the Scottish barons in the days of James VI. obtained from France." And, indeed, looking up at the lofty south front, with its long façade of 150 feet, you might easily imagine yourself in Touraine and on the banks of the Loire. Many architects had come over to Scotland from France with Mary of Guise and her unfortunate daughter, bringing French ideas and designs; and in the reign of James VI. Fyvie chanced to be in the possession of a prosperous statesman with a mania for building. The first Earl of Dunfermline built almost as indefatigably as old "Bess of Hardwicke" herself; he spent large sums in beautifying ecclesiastical edifices; he built at Pinkie House, in East Lothian; and there can be no question that he must have engaged the services of one of the Frenchmen in the great additions he made to his Castle of Fyvie. The "Seton Tower," which bears his family name, forms the centre of the south front, and everything about it is in the purest style of the period, with a bold but graceful originality of design. The arched doorway, which in former times was the grand entrance, is in a deep recess between two tall semi-rounded twin towers, spanned by a corresponding arch above the fourth storey. Stones bearing the Seton arms, impaled with those of the Chancellor Dunfermline's wives, are inlaid in the massive masonry of the walls. But the Seton Tower is only one among others which form the angles of the building, and, though the richest in ornament and the most imposing, is perhaps not the most interesting. There is the Preston Tower, which is the oldest of all, dating from the beginning of the fifteenth century; there is the Meldrum Tower, which comes next in point of time; and, finally, there is the Gordon Tower, which is in keeping with the rest, though very modern by comparison. The whole of the work, whether ancient, mediæval, or modern, is of immense strength and solidity. The walls are generally from six to eight feet in thickness; in some of the most recent additions the masonry may be nearly twice as deep. It is clear that stone is cheap in that country; nor could labour have been costly when coin was scarce. But everywhere here, as in similar though smaller fortalices in Aberdeenshire, we see evidences of taste we should hardly have expected. The castellated defences of former centuries, in the turrets, the bartizans, and the battlements, are harmoniously blended with the ornaments of domestic French architecture, with the projecting gables, the lofty chimneys, and the carved canopies covering the dormer windows. I may give an idea of the imposing general effect by saying that one at least of the corner towers is seven storeys in height from base to battlement. A characteristic feature is the rude statuary, wrought in the red sandstone of the district, by which several of the turrets are surmounted; and there are quaint or grotesque heads in red sandstone let into the outer walls. These roughly-chiselled busts which top the turrets have nothing in common with the life-size figures on the battlements of Alnwick Castle; but they chime in harmoniously with the general design, and one of them at least has a romantic local interest. It is the effigy of Andrew Lammie, the trumpeter of Fyvie; and the melancholy memory of his love for the fair maid of the neighbouring mill of Tiftie is commemorated in a pathetic and popular ballad of portentous length.

The interior of the castle being as massive and as venerable of aspect as the exterior, it might be supposed that if it is a picturesque it must be an uncomfortable residence. As I have already remarked, however, that is far from being the case. On the contrary, thanks to the latest additions by the Gordons, the sitting-rooms are exceedingly bright and habitable; while hospitable proprietors could entertain any reasonable number of

guests in more or less commodious bedrooms. But everywhere you have all the piquancy of sharp contrasts. The present entrance opens into a modern antique hall, where perhaps the most striking object is the enormous brazen lock and key, which might assure the solid doors against anything less formidable than a battering ram. Thence we ascend to the suites of the principal rooms by the magnificent staircase built by Lord Dunfermline. So far as I know, there is nothing in Scotland to rival that staircase, and I should suppose that it is unique in its style. It is no less than 24 feet in breadth; it revolves in corkscrew fashion round a massive central pillar, and the ascent by the long low steps is so easy that it was said that the laird's horse might walk up them without a stumble. But the skill of the architect is chiefly shown in the turns and windings of the ribbed and vaulted roof, with its arches springing occasionally out of carved capitals in the walls, while the impression, in my opinion, is heightened rather than the reverse by the vaulting being low rather than lofty. This is but one of many minor staircases, and the rooms in the towers and the connecting corridors in the body of the buildings form a labyrinth in which a stranger might easily lose himself. Climbing the stairs, turning the corners, and opening the doors at random, you draw upon a lottery of surprises. You may be in a small, circular chamber, with narrow slits in shape of windows admitting faint glimmers of light. You may be in a spacious and very comfortable bedroom, with light and to spare, and all modern conveniences. Or you may be landed in one of the great public rooms, the principal of which are large and lofty, while all command extensive views over the park. The dining-room, which is one of the latest additions, is not only of great size but an admirably proportioned apartment, lighted from three of the sides by five noble windows, and showing to great advantage the full-length portraits on the walls. Almost a square, it is so excessively roomy that the laird before the last could indulge his favourite habit of having a table for 18 guests drawn to one end and placed horizontally in front of the fireplace. There is less elbow-room in the library, which is in one of the older buildings; but the recluse of Monkbarrow would have delighted in it, with its two little side cabinets, which have literally been almost quarried out of the thickness of the walls.

Talking of antiquaries and antiquities takes us naturally down to the dungeons in the venerable basements, to the charter-room, and to the secret chamber. The dungeons, as at Glamis, are still kept under lock and key, but they have been fitted up with wine-bins and contain bottles instead of captives. The charter-chamber, in the bottom of the Meldrum Tower, with its more precious treasures in their fireproof safe, is still more carefully secured—at least, in the absence of the proprietor—though in the time of the late Colonel Cosmo Gordon it was occasionally used as a smoking-room. In Scotland, with the troubled story of its perpetual feuds and frays, sack and sieges, such an unbroken series of charters as that preserved at Fyvie must be rare indeed. The earliest of these documents dates from the end of the fourteenth century.

Immediately beneath the charter-room is the secret chamber—secret, at least, so far as anything it may contain is concerned, for there is no doubt as to the exact locality. Apparently it has never had either door or window, which makes it most improbable that it should have been intended for the concealment of arms, as is suggested in an old plan. Superstition has hitherto held curiosity in check, for it has been guarded by a heavy curse against any one who should intrude on its mysteries. As interesting, in a different way, is the massive iron gate or grating which defended the principal entrance in the Seton Tower. It is hung in the low, vaulted passage a few feet within the outer door, which was of oak and heavily clenched with iron nails. The most ponderous in Scotland, with the exception of that at Drumlanrig, in Dumfriesshire, it is as remarkable for its workmanship as for its size and weight. The horizontal and vertical bars are ingeniously interlaced, each being welded alternately around the other. Considering the enormous mass of the metal, it swings lightly on its hinges, and the heavy bolts that secure it to the opposite wall can be pushed or drawn with a couple of fingers. In short, it is an exceptional specimen of the ordinary defence of the old Scottish fortalice, or peel-tower, which the author of "Waverley" has described in his "Monastery," when the practised skill of the reiving rider of the Clithill extricated the imprisoned inmates of Glendearg. In the centre of the arch and over the doorway is the deadly aperture, styled "the murder hole," whence missiles or boiling fluids might be rained down upon assailants.

**An Alpine Railway** between Chur in the Upper Rhine Valley and Biasca in the Lake Tessin district is projected. The line, which would be 61 miles in length, would have to be carried through the Luckmanier chain by a tunnel 13 miles long.



## THE ARCHÆOLOGY OF CHESTER.

AT the banquet which followed the laying of the foundation-stone of the new museum at Chester, of which Mr. T. M. Lockwood is architect, the following speech was delivered by Sir James Picton, F.S.A.:—I am asked to respond on behalf of archæology. Now, what is archæology? If I were a School Board scholar, I might say it was something about the fishes or beasts of the field, or something perhaps quite as irrelevant. But archæology has been defined. I think allusion was made to it a short time ago by the Most Noble the Duke of Westminster as "history in stone." Well, so it is; but it is something more. History in stone would only apply to the building and outer structure, but archæology has a wider scope. I should say that archæology properly understood is the "outward visible sign of the inward spiritual grace" of history at large. Now Chester is peculiarly privileged with regard to its illustrations of archæology. I don't know that we could find a city or town in the United Kingdom that affords more scope for archæological research and questions relating to antiquity. If you will permit I will just call attention to a few of the points upon which Chester affords some of the most valuable illustrations. First, I would call your attention to the old coast line. I don't know whether the attention of most of those present has been called to that, but it is a most interesting question to pursue, and for that reason I would advise you to take it up. What I mean by the old coast line is that line of cliffs which forms the boundary of what was formerly the estuary of the Dee, which formerly came up to the very side of the city of Chester. It is easily traced; you will see it on the map. That was of course long before the period of written history. When the Romans approached this locality, founded the city of Deva, and planted the victorious 20th Legion here, there cannot be a doubt that the estuary of the Dee extended in a wide sheet of water round two sides of the city. That is tolerably evident from the formation of the ground. Well, here the Romans came, and when we look at the city of Chester even in its present state, we find there are more evidences of Roman construction than in any other city I know of in the United Kingdom. You have the *Pretorian* gates, the *via Devana*, connecting it with the citadel where the Castle now stands. You have discovered also many Roman remains within the precincts of the walls of this city. Then there comes a break in the history of Chester—a period when the Roman dominion had passed away, when the city had been destroyed by the victorious Saxons, leaving it in ruins for generations. Of that period we are not without some interesting remains. Within a very few miles of Chester you have got the termination of Offa's dyke, which was thrown up, as you know, by King Offa for the purpose of separating the English and Welsh populations, and preventing the incursions of the wild Welsh. It is a very interesting fact that in the present day, 1,000 years after Offa's dyke was constructed, the line of that dyke pretty nearly conforms to the line of separation between the English and Welsh-speaking people. Although it is now a little out of the date, I may be permitted by way of parenthesis to allude to the very interesting ruin of Flint Castle, which lies between this place and the termination of Offa's dyke. It is familiar, too, from the account in Shakespeare how Richard II. came there and was detained by Henry Bolingbroke. You all remember the interesting lines in which Shakespeare commemorates that. There it stands, an archæological remain, left in the midst of the tall chimneys of alkali works, and lead works, and other abominations of that kind, bringing down to our day the recollection of a period when in England the feudal system was in its full vigour, and when some of the most interesting transactions in the history of our country were performed. Then we come down to the Middle Ages. The most important building that remains from that period in Chester is the cathedral. There I have a word or two to say. Chester Cathedral, as you all know, was not built for a cathedral. It was built for an abbey church, but I don't know any cathedral in the kingdom that possesses more elements of interest and points of architectural association with the various times than does Chester Cathedral. You have got in it examples from the earliest Norman down to the latest Perpendicular and Tudor—specimens in fact of every style of architecture that ever prevailed in the country. Here it is only right to repeat what has often been repeated before, and I hope will be often repeated again, that a debt of gratitude is owing not only from the city of Chester, but from the whole diocese and the country at large, to the Very Reverend the Dean, for the energy and success with which he got up the fund for the restoration of the cathedral, and the tender and loving manner in which he looked after the execution of the work. I don't think there has been a restoration throughout the kingdom which has been on the whole so perfectly satisfactory as that of Chester Cathedral. I say he treated it with a tender and loving hand—that is to say, he destroyed nothing that could possibly be preserved, and wherever it has been necessary to restore, it has been done as much as possible in exact consistency with what had been done before. Whenever I

come into Chester and have half an hour to spare, I go into Chester Cathedral to contemplate the beauties to be found there, and to reflect upon the excellence of the works of former days, and whenever I go there I recognise with gratitude the noble work of the Dean, which is, I believe, appreciated by the citizens of Chester, who recognise their indebtedness to him. It was said that Alexander, when he had completed his conquests, wept because there were no more worlds to conquer. It appears our worthy Dean is in much the same condition. He has restored Chester Cathedral, and now he pants for another similar work to do. Accordingly he has taken up this work of our Archæological Museum, and if there is any man in Chester capable of succeeding in the enterprise, it is, I am sure, our worthy Dean, and I wish him every success in it. We come now in the Middle Ages to the quaint old street architecture of Chester. There is nothing like it in the kingdom. There are in many towns and cities in the kingdom fine old houses scattered here and there, but for a continuous range of Mediæval buildings such as there are in the streets of Chester, I know of no comparison anywhere. There are two things characteristic of the Middle Ages which belong to Chester which are specially interesting. I mean the continuous walls round the city and the Chester rows. With regard to the walls, in their circuit they are absolutely continuous. It is very much to be regretted, but I suppose it is in accordance with the ideas prevalent at that time, that the old gateways have been disturbed. At York, you are aware, they have preserved the old gates, which gives an air of antiquity and grace to the gates of York to an extent which is wanting in Chester, but the walls of York are not complete. The walls of Conway are complete, but there is no road round them as in Chester. The walls of Londonderry are very nearly complete, but not quite so. Chester is the only place in the kingdom where you can take a complete circuit round the walls, and therefore it is, in a sense, a rich gem handed down to us by our forefathers. With regard to the rows they are a singular puzzle. Many theories have been broached—it is supposed they have been hollow ways intended for giving an advantage against an enemy, and that defence would be made by throwing down stones upon the enemy from the sides of the hollow way. Another idea is that they were built in this way for the purpose of witnessing processions in the streets, but that would be too flimsy a pretext to assign for their construction. At any rate, there they are. There is nothing like them in the civilised world, and you may well be proud of them. There are many arcades in different cities on the Continent. Bologna has miles of arcades, and Berne has arcades within its precincts, but for an arcade passing round the houses on the one-pair floor there is nothing like them in Europe, and it is natural you should be proud of them. I am very pleased to see also that in the restoration of the buildings of Chester—for buildings, after all, have only a certain term of existence, and have to be restored—I am very pleased to see that the old Gothic Mediæval style has been to a great extent kept up. There was a period, perhaps eighty or a hundred years ago, when all that had been forgotten, and in some of your streets where buildings in the rows had been pulled down, they were substituted by ugly brick buildings. But that time has passed away, and a better sense of what is due to the antiquity of Chester has begun to prevail. I must speak a word to the credit of your architects in Chester. They have very agreeably kept up the style of the old architecture, and in this way made Chester a city you may well be proud of. I am sure that my friend, Mr. Lockwood, in the building which he has designed, and a view of which I have got here, and which he is now about to erect, will do no discredit to the traditions of Chester. It will add one more to the buildings which are quite in character with all the traditions of the city. There are some things that one cannot forget on occasions of this kind. I cannot but feel that it is the proper and the graceful thing to do to make allusion to the excellent disposition and the feeling of cordiality which has existed for many years, and still continues to exist, between the noble house of Grosvenor and the citizens of Chester. It redounds very much to the credit, I may say, of both of them. The liberality of His Grace the Duke of Westminster has been manifested in a variety of ways. It has been handed down to him by his forefathers that a duty as well as a privilege is attached to his high station, and when you remember the liberality with which the park is thrown open, and the noble mansion is thrown open, the statues he has erected, and the noble gardens he has laid out, I say that Chester is very happy in having such a noble neighbour to assist her. I see there the Grosvenor motto—"Virtus non stemma"—that has been the motto which the noble Grosvenor family has acted upon for past ages. And the sense of it is by no means obliterated in the present generation. I can only hope that His Grace and his charming Duchess may be spared to see the fruits of their liberality and nobility of spirit in connection with the institution which we have been inaugurating to-day. I beg to congratulate him on the circumstances under which we are met. We cannot tell what changes there may be in the womb of time, political and social, con-



nected with our common country; but this I am sure of, that the time will never come when Englishmen will fail to appreciate the noble and generous deeds and the excellent character and doings of the Most Noble the Duke of Westminster.

## GLASGOW ARCHITECTURAL ASSOCIATION.

AT the last monthly meeting a paper entitled "A Sketch of the History and Characteristics of Stained Glass" was read by Mr. David Anderson, art teacher. The vice-president occupied the chair. The development of the art was traced from the earliest Egyptian vessels down to the Jacobean and Queen Anne domestic work of England. In the progress of the paper the changing architectural styles were noticed as the cause of the different methods of composition followed in window designs, the various processes of manufacture described, and a criticism of the various schools of glass-staining submitted. The paper was illustrated by full-sized drawings of some modern work, and also examples of glass, both lent by Messrs. Adam & Small, and other lithographs and prints. After a discussion, opened by Mr. Brough, a vote of thanks was passed to Mr. Anderson.

## TESSERÆ.

Raphael's Madonnas.

GUSTAVE PLANCHE.

TO every man accustomed to the study of living nature it is evident that the Madonnas of Raphael do not and could not live. The lips so refined and pure could never talk; the chastely downcast eyes could never look up; the cheeks, whose contours excite our utmost admiration, never glowed with such blood as runs in our veins. That this is true is the chief reason that Raphael was the greatest of religious painters; if life be impossible for the beings whom he created, it is not because he has stupidly omitted one or many of its elements, but because he has simplified, through his own powerful will, the forms in which life makes itself known to us. In order to bring the human face within the true harmony of lines of which he dreamed, he eliminated those petty details which nature presents us, with which actual life cannot dispense, but which nevertheless are not absolutely necessary in a picture. He subdues that lively colour which indicates rude force and health; he softens those muscular masses which explain and produce movement; he effaces the folds of the eyelids: and all this perpetual simplification of the lines of the human figure, far from being an evidence of ignorance or want of skill on the part of the artist, serves to signify that he has conceived and is realising a form more pure and elevated than that of ordinary humanity. His knowledge enables him to abbreviate; his wish for generalisation causes him to simplify.

Italian Campaniles.

W. S. OKELY, M.A.

In Italy a church has generally only a single campanile. It is extremely rare to find a group of towers such as occurs so frequently on the Rhine, or even the moderate number of two or three, of which England and France present to us so many examples. The campanile stands either placed in contact with the exterior wall of the side aisle, or at a little distance from it, or else it rises over one of the compartments of the side aisles. Whatever be its position, it is rarely made to combine and form one design, either with the façade or any other exterior member. Perhaps the only exceptions of any importance are the Duomo at Genoa; S. Andrea, Vercelli; and S. Antonio, Padua. Of the first, only one of the two towers is completed, but both stand so as to form parts of the façade in a manner similar to that seen in many churches north of the Alps. It may be considered that this independency of the campanile detracts from the grandeur of the church considered as one mass; and this must be admitted, though the church with its detached campanile forms a most picturesque object, especially when the group is completed by the addition of a baptistery. The fewness also of the towers in Italian churches compared with what we see in other countries, and in some cases the entire absence of them, takes away from that majesty which, on account of their great dimensions, so many of the Italian churches would otherwise have. Many an ordinary church, which in magnitude would rank side by side and even exceed that of an English cathedral in everything except perhaps in length, is passed by with little concern as it lies partly hidden by the lofty palaces of the narrow streets. Had these churches been built with pairs of towers attached to their façades, and lantern towers over the crossings, the distant view of an Italian town, striking as it is, would have been surpassingly grand.

Greek Marble.

E. DODWELL, F.S.A.

In the Pentelic marble are frequent veins, or strata, of green mica; large detached pieces are also found, as on Hymettos. The marble of Pentelikon and Hymettos rests on a stratum of micaceous schist of unknown thickness, which seems to run throughout the whole of Attica, and to form the base of all its mountains. Many quarries of white marble were known to the ancients in Greece. Most of the remains of Thorikos and the temple of Sunium are built with marble found on Laurion, near Thorikos; it is of a fine close-grained quality, containing only a small portion of mica. Rhamnos in Attica, Demetrias in Thessaly, and the islands of Naxos, Tenos, and Thasos contain ancient quarries, but the most celebrated are those of Paros. Modern writers are in the habit of adopting with too implicit confidence the opinions of the ancients, who have also placed too much reliance upon those of their predecessors, an instance of which may be seen in Pliny, who pretends that the Parian marble was called *lychnites* because, being subterranean, it was cut by the light of lamps: "*Quem lapidem Parium cœpere Lychniten appellare, quoniam ad lucernas in cuniculis cæderetur, ut auctor est Varro.*" The Parian quarries, however, are not subterranean, but cut down the side of a mountain open to the glare of day. The word "*lychnites*" was applicable to the marble on account of its large and sparkling crystals and semi-transparent quality; and for a similar reason the transparent Cappadocian stone was named *phengites* from *φῆγγος*, as *lychnites* from *λύχνος*, as it is called by Athenæus. The coarse-grained Parian marble has generally been mistaken for the Pentelic; and the latter from its fine and even quality has been attributed to Paros by those who have not visited the Grecian quarries.

Copying Mouldings.

PROFESSOR PALEY.

The best and simplest way of all is by inserting the paper in a loose joint, or by applying a large sheet of paper where a stone has been removed and left the edges sufficiently clear and sharp to trace their outlines by pressure against them, or by a pencil. These methods, however, are but seldom available, except in ruined buildings, and here care should be taken not to damage or destroy any portion of the little that is left. But many fragments of monials, groin ribs, voussoirs, and other moulded stones may be found in every old abbey, and these may readily be placed upon sheets of paper for the purpose of tracing their outlines. By these means alone a large collection of very valuable specimens may be made.

Arabesque and Grotesque.

W. DYCE, R.A.

The power of imitating objects artistically is not adequate to the ends which the ornamentist contemplates. Representations of natural objects, such as flowers or animals, are not ornaments in any other sense than works of painting or sculpture may be said to be so. The application of such representations to walls or articles of furniture, it is true, has often been made, and is daily made, for ornamental purposes, and constitutes a species of ornamental art; but it is only one among a thousand others in which artistic imitation is inadmissible. The artist and the ornamentist may choose out of caprice, as in the case of arabesques, to unite their two arts; but the arts are not essentially the less distinct, nor, as a general rule, are less incompatible in practice. The very name grotesque, applied to that kind of art by the painters of the Middle Ages because the ancient specimens of it were mostly discovered in grottos or ruins, is used by us to express anything very absurd or ridiculous; and, in truth, since it is a matter of fact that arabesques in painting or sculpture have always been the offspring of artists, they ought rather to be looked upon as a kind of beautiful nonsense than as a species of art to be reasoned about.

Blenheim Palace.

A. ASHPITEL.

The palace had been originally voted by Parliament, but with a meanness and ingratitude that is scarcely credible, they would not provide the money to pay for what they had formerly voted. Whatever faults Marlborough might have had he had saved his country—nay, Europe—from the ambition of the French monarch, by a series of the most brilliant victories. If he had not deserved the gift it should not have been voted, but having by a formal Act decreed it should be given, it was a mean mockery to withhold the money to pay for it. The queen, however, with a generous spirit, provided the funds from her own private purse during her life. At her death, the duke, though always protesting, occasionally continued to pay the workmen, believing ultimately that he should be reimbursed by the Treasury. It was before the age of "cutting" con-



tractors and "run-up" work. The custom then was for the architect to employ such workmen as he thought fitted for the job, to pay them himself, and to call on his employer from time to time for money as it was wanted. It may be thought the Parliament had been guilty of a consummate meanness in refusing supplies to carry out its own vote; but this meanness was outdone by the duke, or rather the duchess, who ruled him and every one else with a brazen sceptre. The worthy pair actually refused to pay the workmen, who, of course, were obliged to look to Vanbrugh, from whom they had received their orders. That both the duke and duchess were stained with avarice to the core, and that the latter was a fury in temper and a savage in resentment, is well known; but that they should have the gross injustice to expect their architect to pay their debts, and make them a present not only of his services, but of the house they were to live in, is absolutely inconceivable. It seems that Vanbrugh had actually advanced 2,000*l.* (a large sum in those days, especially for an author, to advance) on account of Blenheim at the time they thought proper to quarrel with him. In the meantime the duke died, leaving the duchess not only an immense fortune, but a special sum of 10,000*l.* per annum to finish Blenheim. This the duchess did, being wise enough carefully to follow out Vanbrugh's plans, though she not only excluded him from any direction of the works, but absolutely prohibited his being admitted to see the building, although accompanied by his fast friends the noble Howards. It is very satisfactory, however, to find he at last got his money, "in spite," as he says, "of the hussy's teeth."

#### Fresco-Painting.

SIR DAVID WILKIE, R.A.

It has frequently occurred to me that the restoration and introduction of fresco-painting into England would yet give a chance for the cultivation of the higher styles of art. We that possess so much, and think we know so much, know nothing of fresco; know nothing of that, the only mode known to the ancients, with which modern art grew from its revival to its greatest perfection, and with which the finest works are found identified, and must ultimately perish. Its qualities are essentially different from oil-painting. It is more abstract, less deceptive, can be seen further, in any light and in less light; though equally ornamental, it has not the palliatives of oil; though advantageous for the display of beauty, grandeur, and style, it cannot, like oil, give interest by softening or concealment to the mean form or to the low subject. An oil picture is a piece of furniture to be changed or removed at pleasure, while the fresco is a part of the fabric itself, combining sculpture and architecture, historic truth and poetic fiction, in one wide range to illustrate the purpose of the building, which, be it the gorgeous palace or the solemn temple, derives from fresco a most impressive splendour and dignity.

#### Measuring Timber.

R. MURRAY.

In measuring standing timber, the length is taken as high as the tree will measure 24 inches in circumference, less than which measurement is not considered as timber. At half this height the measurement for the mean girth of the timber in the stem of the tree is taken; one-fourth of this girth is assumed to be the side of the equivalent square area. The buyer has, in general, the option of choosing any spot between the butt-end and the half height of the stem as the girding place. All branches, as far as they measure 24 inches in girth, are measured in with the tree as timber. An allowance, which varies according to circumstances, is generally deducted for the bark. In oak it is from about one-tenth to one-twelfth of the circumference at the girding place; in other sorts of timber it is less. In all, however, this allowance depends much upon special agreement. It is usual to speak of timber by the load, which means 50 cubic feet of squared timber, or 40 cubic feet of rough timber. A load of plank is dependent upon its thickness. Thus, it will require 200 square feet of 3-inch plank to make the load of 50 cubic feet; therefore, the load of plank is the number of square feet of its respective thickness, which is necessary to make the load of 50 cubic feet. Deals are measured, according to their thickness and lengths, by the hundred, reckoning 120 to the hundred.

#### Drying of Wood.

J. JUSTEN.

Wood is a porous body, and contains in its natural state, whether dead or alive, a certain amount of moisture. By the loss of that moisture, or with the increase of the same, the bulk of the wood either contracts or extends. If we have a piece of wood where the action takes place only upon one side, it is obvious that the piece will alter its form or shape. The consequence of the loss of moisture is also the warping and the splitting of the wood. The inner structure of a stem is irregular;

for instance, we find the inner moisture of a yearly ring to be more than on its outer side. This causes the splits on the exterior after the wood is dry, and it also accounts for the impossibility to form out of the green wood a regular body which could not lose its weight or shape. The time during which the evaporation of the moisture takes place depends upon the state of the atmosphere. Several authors are of the opinion that the contraction is regulated by the specific weight. This, as a rule, cannot be adopted; for instance, lilac and oak, both being heavy and hard, contract quickly, whilst the South American maple, which is equally hard, contracts slowly. It is evident, however, that the fuller of sap a tree is, the greater will be the contraction. This will account for the fact that we find on cut timber the cracks extend from the exterior towards the centre, because the sapwood will contract more than the heart of the wood. Planks turn with their sides upwards; that is, the edges rise from the level of the centre line. This explains why we turn the inside of a plank towards the joists whilst we lay a floor, which prevents the twisting. The contraction and action of the wood cannot be checked altogether. Among the means to prevent it stands foremost the one of putting the tree into water; but when taken out it must not be stored in a place where it dries too soon, as it still would burst if done; nor must it be left too long in the water, as this will injure the quality of the wood.

#### Scagliola.

PROFESSOR ANSTED.

A highly-ornamental material, consisting of a coating of plaster mixed with alum and colour into a paste, and afterwards beaten on a prepared surface with fragments of marble, &c., has often been known under the name of scagliola, and is greatly used as an excellent and economical means of imitating the finer kinds of marble, the material being as hard as marble, very durable, cold to the touch, and taking a perfect polish. The name scagliola is derived from Italy, where the process is said to have been invented more than two centuries ago, but is now very extensively used for decorative purposes in England. The cement is prepared from the finest gypsum, broken up before calcining, and afterwards reduced to a fine powder, and passed through a sieve. It is then mixed with aluminous matter and isinglass, also with colouring matter, and it is afterwards made up with alum; and as it is generally made use of only where the more beautiful and veined marbles are to be imitated, as many different colours and shades of colour must be mixed up separately as there are in the kind of marble to be represented. Thus prepared, it is ready to be laid on to the surface intended to receive it, which has a rough coating of lime and hair already prepared. The different colours having to be laid on and mixed by the hand, the work somewhat resembles that of the fresco-painter, everything depending on the skill of the operator in imitating the style, beauty, and veining of the original. When the cement is laid on and has hardened, the surface is prepared for polishing by rubbing it with pumice-stone, and cleansing it with a wet sponge. It is then polished by rubbing, first with tripoli and oil, and lastly with oil alone. A durable lustre is thus obtained equal to that of marble.

#### Mathematics and Practical Construction.

PROFESSOR RANKINE.

In theoretical science the question is, *What are we to think?* and when a doubtful point arises, for the solution of which either experimental data are wanting, or mathematical methods are not sufficiently advanced, it is the duty of philosophic minds not to dispute about the probability of conflicting suppositions, but to labour for the advancement of experimental inquiry and of mathematics, and await patiently the time when they shall be adequate to solve the question. But in practical science the question is, *What are we to do?*—a question which involves the necessity for the immediate adoption of some rule of working. In doubtful cases, we cannot allow our machines and our works of improvement to wait for the advancement of science, and if existing data are insufficient to give an exact solution of the question, that approximate solution must be acted upon which the best data attainable show to be the most probable. A prompt and sound judgment in cases of this kind is one of the characteristics of a practical man, in the right sense of the term.

Messrs. Le Grand & Sutcliff, of Magdala Works, Bunhill Row, London, E.C., have received instructions to supply Norton's patent registering turnstiles and exit-cage turnstiles to the Cleethorpes Public Gardens, and also Cleethorpes Pier, Great Grimsby, Lincolnshire. These are the same pattern turnstiles as were used for recording the seven million entrances to the Fisheries and Health Exhibitions, and which are also to be used at the forthcoming Inventions Exhibition.



## NOTES AND COMMENTS.

ONE of the most interesting parts of the Health Exhibition at South Kensington was the room containing the models of the Roman baths at Bath, with photographs, engravings, and examples of materials which had been brought together and arranged by Major DAVIS, F.S.A. The collection was valuable on archæological and sanitary grounds, and was deserving of the two diplomas of honour which were awarded to it. The cost of the work it is now found has been 1,378*l.* 9*s.* 3*d.*, which was made up of the following sums:—Modellers' wages and materials for and completing models, 450*l.* 15*s.* 1*d.*; fixing models at Exhibition, banner, railings, and other purchases in London throughout, 377*l.* 17*s.* 2*d.*; printing pamphlets, books, photographs, &c., 153*l.* 14*s.* 11*d.*; Major DAVIS's remuneration, travelling and hotel expenses, 120*l.*; carriage of models, 35*l.* 16*s.* 2*d.*; attendant's wages, 108*l.* 12*s.* 5*d.*; travelling expenses, 36*l.* 5*s.* 11*d.*; miscellaneous expenses, 36*l.* 13*s.* 4*d.*; closing expenses, 58*l.* 14*s.* 3*d.* When the advantage that has been gained by Bath in having the merits of its waters made known to so large a number of people is considered, the expenditure on the exhibit as an advertisement was a good stroke of policy. The models are now in the New Orleans Exhibition, where, in spite of the general failure, they are not likely to prove unattractive.

A COMMITTEE of the Birmingham School Board have been making inquiries throughout the country in order to ascertain, before any more buildings are undertaken, what kind of school is considered to be the best by members of other Boards and by head-teachers. After analysing the information thus obtained the following conclusions have been drawn:—1. That, as a general rule, a school should accommodate about 1,000 children. 2. That a school should be on the class-room system, with a central hall. 3. That on sites of not less than 4,000 square yards a one-storey building is to be preferred. 4. That not less than four exits should be provided from the school into the playground. 5. That one pair of class-rooms in each department should have a movable screen between them. 6. That not fewer than eleven class-rooms should be provided for children above seven years of age. 7. That the class-rooms should be designed for an average attendance of sixty. 8. That the exits from the class-rooms should be, as far as possible, into corridors between the class-rooms rather than into the central hall, and that these corridors should be used as largely as possible for cloak-room purposes. The existing Board Schools in Birmingham have been designed by Messrs. MARTIN & CHAMBERLAIN, and are said to be superior to many of those elsewhere. The new schools, which will embody the suggestions of the committee, are expected to cost from 20*s.* to 40*s.* per head over the cost of those schools.

MM. GOOSSENS & DUBAUX, of Schaerbeek, seem to find few rivals among the Belgian contractors. Tenders were lately sought for works connected with the canal between Charleroi and Brussels, including the construction of branches, and only one was received. It was from the above-named firm, and amounted to about two millions of francs. When the state of work in England is considered, it is surprising that none of the English contractors endeavour to secure Continental works.

FROM the description which was given by Principal JAMIESON at the Glasgow Philosophical Society, it is evident that the Americans have been more successful in transporting Egyptian obelisks than any other people, and at a very much less cost. When the French obtained a grant of the obelisk that is in the Place de la Concorde there were 800 Arabs employed, and so many engineers were sent over and spent so long a time there, that all the dancing-girls in Luxor were said to know French. The cost was about 560,000 frs. The Needle on the Thames Embankment in one way or another must have involved an equal outlay. The American obelisk is 69 feet long, 8 feet wide at base, and weighs about 200 tons. Lieutenant-Commander GORRINGE, who had charge of the operations, had the block first covered with strong planking, and clasped at the calcu-

lated centre of gravity with strong steel trunnions supported on steel frames, which rested on a concrete foundation. Having been pulled over, it was supported at each end by a tier of planking, and then lowered by means of hydraulic jacks into a caisson or barge. It was afterwards towed to the steamer *Dessoug* in the graving dock, and put on board through a hole cut in the vessel's bows by a carpenter specially taken from Glasgow for the purpose. The vessel then conveyed the obelisk to New York, where it was erected in Central Park. By adopting so simple a way, the removal from Alexandria to New York did not cost more than one-fifth the sum that was paid for bringing a similar monolith to London.

THE demolition of a chimney-shaft of about 130 feet in height was lately accomplished in the following inexpensive way at Carouge, a village near Geneva. The courses on one side near the base were removed and timber shores were placed to support the mass, so that no danger could arise to the workmen. A fire was then lighted, and in a short time the timber was weakened, and as the pressure increased the whole of the chimney toppled over. The experiment was without precedent in Switzerland, and was observed with interest by the builders of Geneva.

THE council of the Derbyshire Archæological Society have adopted the plan of publishing abstracts of some of the more interesting and original records relating to the county, which are found in that great national storehouse of history, the Public Record Office. The value of such absolutely authentic information to the future parochial or general historian of the county, and its general interest to all readers interested in the past life of Derbyshire, cannot be exaggerated. This year the early "fines," or final agreements, are begun. Probably more space will be given in future numbers of the "Transactions" to this feature. The example might well be imitated in other societies, for one of the difficulties of an archæologist is the discovery of local information amidst the vast mass of national records. It is expected that the Royal Archæological Institute will commence its congress in Derby either the last Tuesday in July or the first Tuesday in August next. The congress lasts eight days, and expeditions and meetings of exceptional interest will be arranged. Steps are already taken to form working committees, and a temporary museum will be formed.

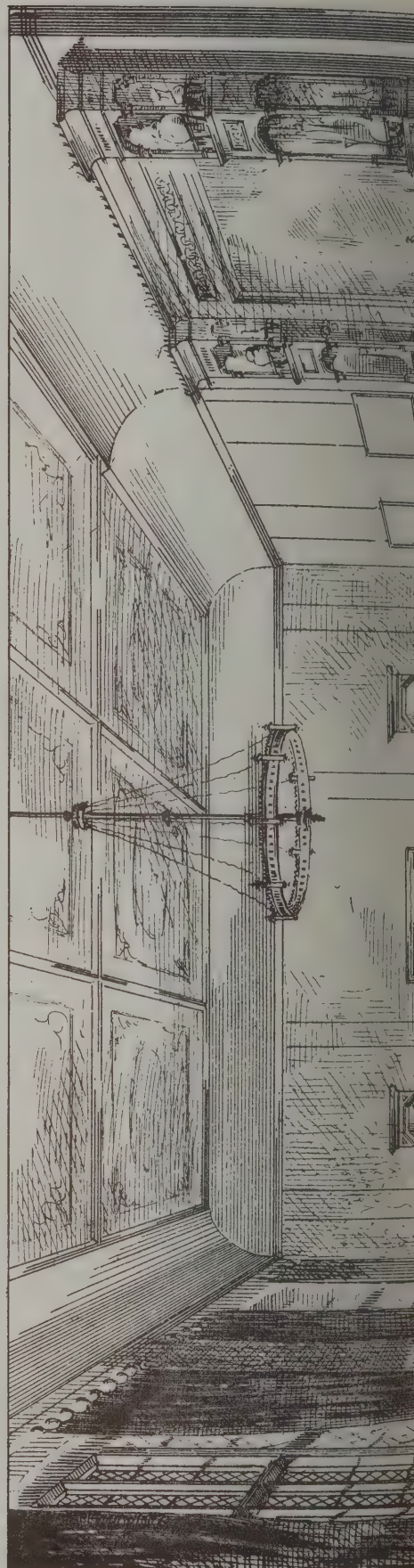
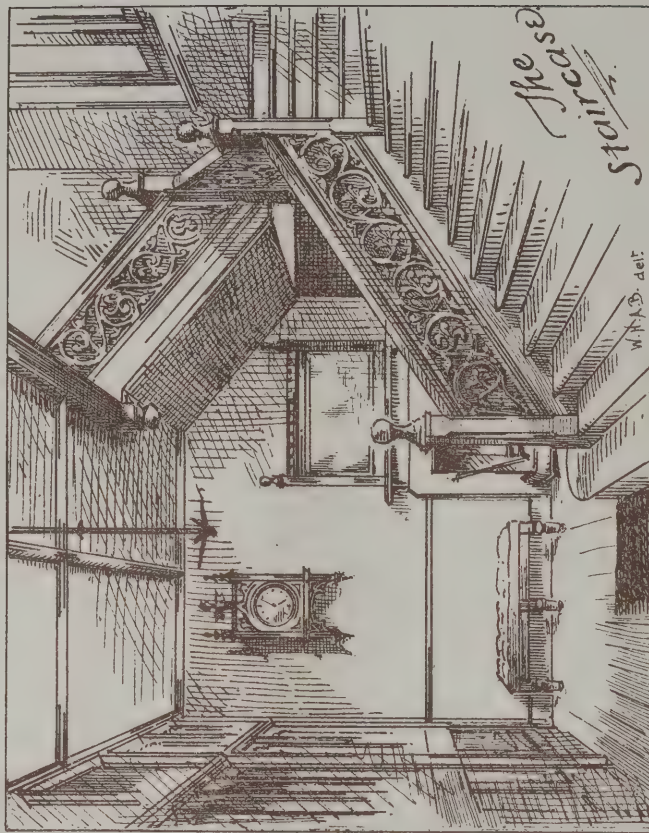
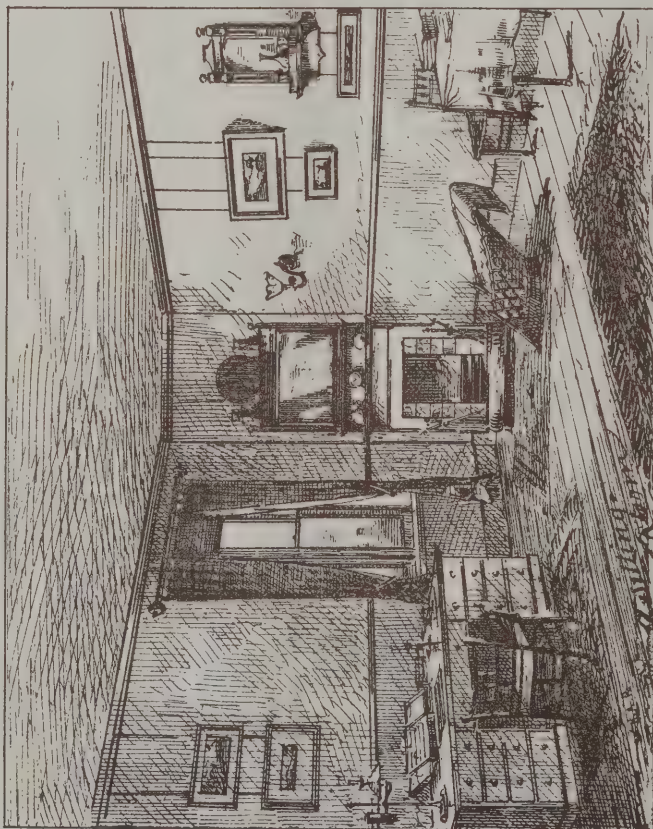
A SMALL but excellent handbook or pamphlet on "Perspective" has been prepared by Mr. E. F. C. CLARKE, architect, for Messrs. ROBERTSON & Co. It is well adapted for painters' use, who often lose time in endeavouring to fix the relative sizes of objects in pictures. The handbook is not a geometrical treatise, but a short and ready series of suggestions for men who are able to draw and paint, but have not made a special study of the science.

A PARAGRAPH has been reprinted in some of the English papers on the subject of experiments which have been made in America upon the deterioration of iron under varying loads. But from the way in which it has been worded, it would seem as if there was a revelation of flaws which hitherto had been concealed. All that the experiments appear to prove is that there is a greater strain on a girder under a variable load, as in a railway bridge, than when it sustains a constant load, as in a wall. The following conclusions by WÖHLER and SPANGENBURG appear to express what is known on the subject:—1. Rupture may be caused by repeated applications of a unit-stress less than the ultimate strength of the material. 2. The greater the range of stress the less is the unit-stress required to produce rupture after an enormous number of repetitions. 3. When the unit-stress ranges from zero up to the elastic limit the number of repetitions required to produce rupture is enormous. 4. A range of stress from tension into compression, or *vice versa*, produces rupture sooner than the same range in stress of one kind only. 5. When the range of stress in tension is equal to that in compression, the unit-stress which produces rupture after an enormous number of repetitions is a little greater than one-half of the elastic limit.

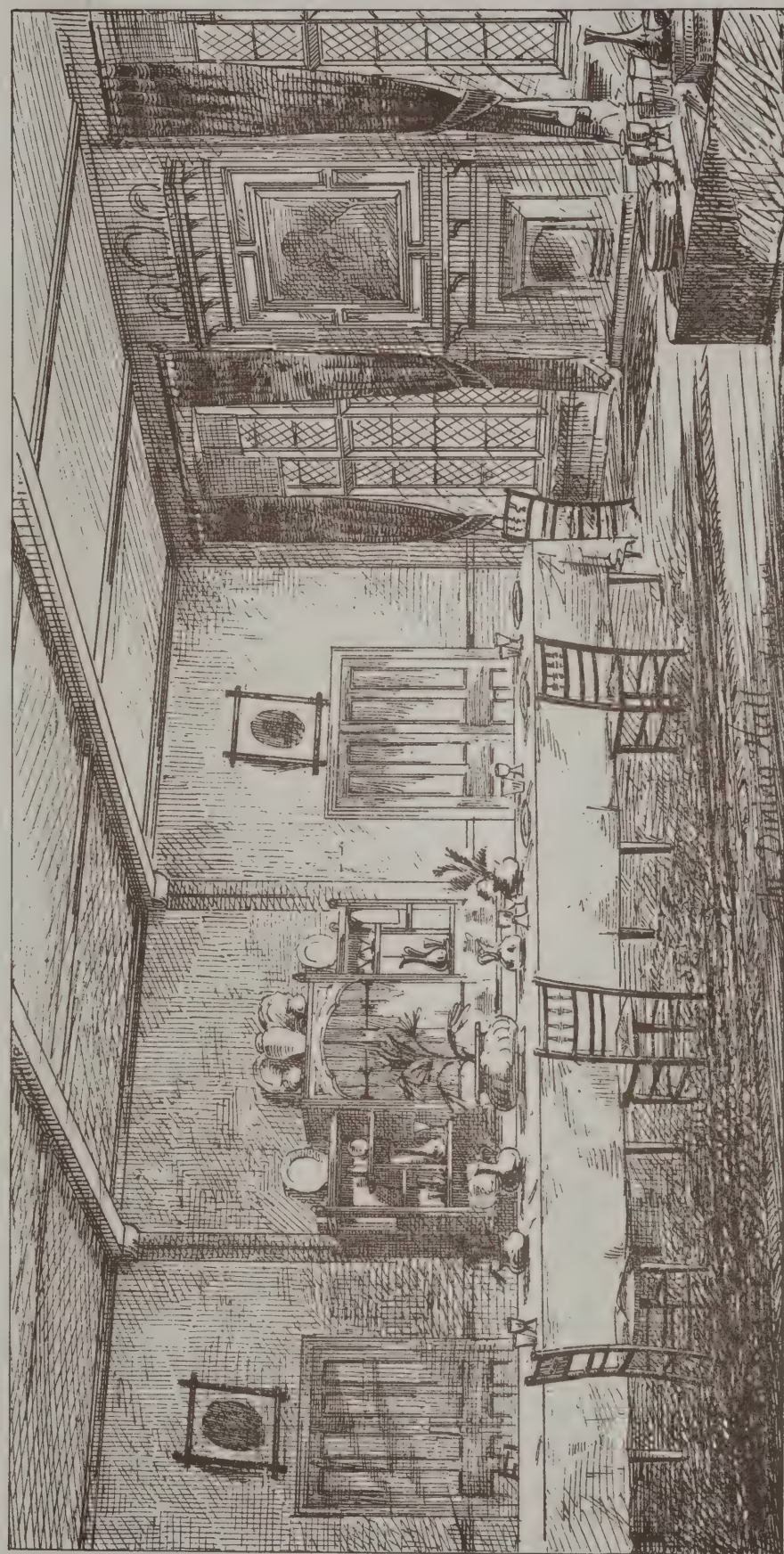












TOYNBEE HALL · Commercial Street · Whitechapel · E · E Hoole · F.R.B.A. Architect · 104 Great Russell Street · W.C.













Spottiswoode & Co Lith London

CHURCH OF ST. NICHOLAS, BLOIS.

DRAWN BY EDWARD W. JENNINGS.









"INK-PHOTO," SPRACUE & CO., LONDON.

HEBREWS.  
BY F. A. BRIDGMAN.





INK PHOTO, SPRAGUE & CO. LONDON

A ROUMANIAN LADY.  
BY F. A. BRIDGMAN.

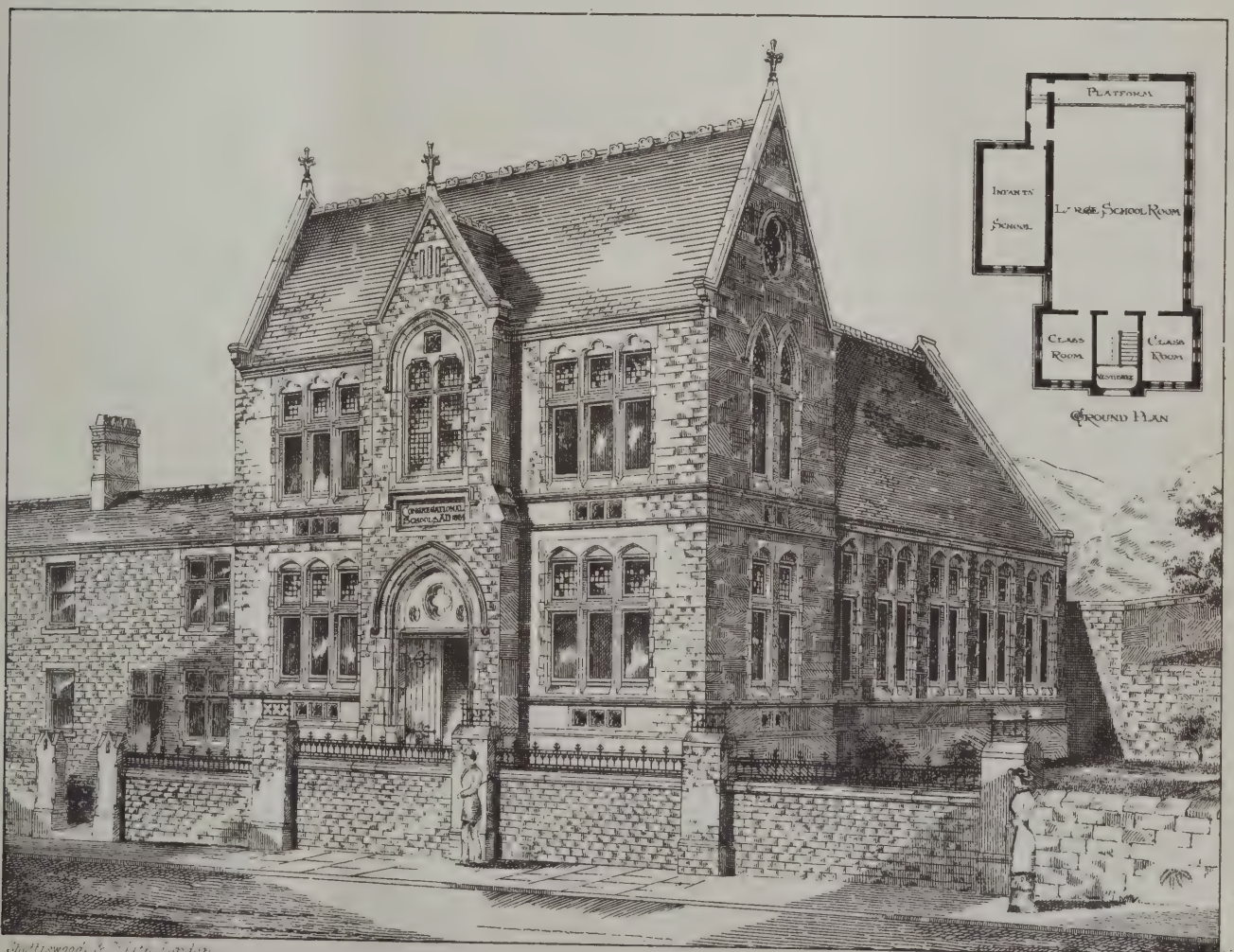








PROPOSED VILLAS, PATTY MOON'S WALK, TUNBRIDGE WELLS.  
BRETT A. ELPHICKE, ARCHITECT.



CONGREGATIONAL SUNDAY SCHOOLS, DELPH.  
ALEXANDER BANKS, ARCHITECT.







## ILLUSTRATIONS.

I. HEBREWS. II. A ROUMANIAN LADY.

WE have already published two illustrations from pictures by Mr. BRIDGMAN, the American artist, who now lives in Paris, which were striking from their Eastern character and the treatment of light and shade. In the plates which are now given Mr. BRIDGMAN has not gone quite so far eastwards, but, like the others, they are suggestive of his fondness for subjects which are remote from Western civilisation. In pictures like that of *Royal Sport*, where an Assyrian monarch is shown killing a lion, or the *Funeral Procession of a Mummy*, we have a combination of archæology with art; while in other works, like those illustrated, we see the painter's powers in imparting picturesqueness to every-day life.

TOYNBEE HALL, WHITECHAPEL.

THE building, of which some interior sketches are given in this number, has been built in Commercial Street, Whitechapel, for the residence of twenty graduates of the Universities of Oxford and Cambridge. Although recently opened, it is fully tenanted. The buildings have been executed in red brick and Box stone by Messrs. LATHEY, from designs by Mr. E. HOOLE, F.R.I.B.A., of 104 Great Russell Street, W.C. An account of the University settlement in Whitechapel may be found in the January number of *Time*.

PROPOSED VILLAS AT TUNBRIDGE WELLS.

THE illustration shows the view of a pair of villas in course of erection for Mr. ALFRED DIGGINS, and are situated in Patty Moon's Walk. The treatment of elevations is local red bricks and tiles, relieved by rough-cast, the cost for the pair being about 1,100*l*. Mr. J. JARVIS, of Tunbridge Wells, is the contractor.

CONGREGATIONAL SUNDAY-SCHOOL, DELPH.

THIS building has recently been erected at Delph, Yorkshire, from plans prepared by Mr. A. BANKS, architect, Oldham, who has also superintended the work. The style of architecture adopted throughout the building is a free treatment of Gothic. The flatness of the front is relieved by a projecting bay, which contains the inscription and memorial-stones, placed above the entrance-door. The large school, which is 52 feet by 29 feet, and contains a platform at one end, has an open-timbered roof of a simple design. Adjoining the front vestibule are the ground-floor class-rooms, measuring 14 feet by 10 feet, containing cupboards placed under the window bottoms, and used for the storage of books. The staircase, which is of stone, and is in close proximity to the front entrance, leads to the first-floor class-rooms, which are similar to those on the ground floor, though much more lofty. At one side of the large school is the infants' room, measuring 30 feet by 14 feet, and is only one storey high. The building is faced externally with the best Lightcliffe parpoints, relieved with sandstone dressings, the roofs being slated with Welsh slates, capped with red ridge tile. The various rooms on the ground floor are laid with patent wood-block paving, which is noiseless, and impervious to damp and dry rot, which is so prevalent in the locality. The upper portion of the windows are glazed with lead lights, and the lower portions with sheet glass. Great attention has been paid to ventilating the building, TOBIN's inlets having been used in all the rooms for the admission of fresh air, BOYLE's air-pump ventilator having been used for the extraction of the vitiated air. The building is heated on the low-pressure system, the pipes being fixed in all the rooms. The chief contractor is Mr. C. WINTERBOTTOM, Delph.

CHURCH OF ST. NICHOLAS, BLOIS.

THIS illustration is taken from a drawing by Mr. E. W. JENNINGS, of Swansea, some of whose sketches of French buildings have already appeared in this journal.

The Art Exhibition at Wolverhampton, which was lately closed, contained 129 pictures and 150 water-colours. The great masters were represented by 107 examples, and British artists by about 300 pictures. Of the whole collection 500 were contributed by noblemen and gentlemen in the town and neighbourhood. The pictures and other works of art in the gallery were insured in the gross for 91,000*l*.

## THE BOYLES: FATHER AND SON.\*

WHETHER modern buildings are better or worse than those erected by our forefathers is a question on which people profess to differ, but there is no doubt that a greater variety of men, and of men who are more widely separated, are concerned in modern construction. In old days a building was generally a product of the district in which it was erected, if not of the nearest village. It was probably built of local wood and local bricks or stones, and the local craftsmen were able to do all the work, whatever might be the material. There was so little brought from a distance that building was hardly considered to have reached the dignity of other trades in the eyes of economists. When a writer wished to show what commerce or production meant he referred to the breakfast-table or to dress, and explained how the coffee came from one part of the world and the sugar from another, and speculated on the difference between the men who produced the silks and the muslins of the lady who presided at the table. It would have seemed an impossibility to draw illustrations from the house or the merchant's shop. Nowadays the case is altered. It is only necessary to glance over the advertisement pages of a journal such as ours to perceive the number of traders and manufacturers who co-operate in the building of the cheapest house. Distance is no longer reckoned, and it is found more economical (to say nothing of other reasons) to bring articles some hundreds of miles than to have them made on the spot. The humblest builder in a remote village is in correspondence with wholesale houses in Birmingham, Glasgow, or London, and it would seem as if, in course of time, the office of the local workman will be simply to arrange in their proper positions the things which have been manufactured in another part of the country. There is not a modern Board school which could not be made to afford a lesson in the geography of England by simply explaining the positions of the places from whence its constituents were derived.

Another cause has helped to make the local man no longer all-sufficient. Every building of size comprises many inventions among its parts—ventilators, grates, locks, hinges, bells, lights, drains, &c., which are patented productions, besides things which are equally the work of specialists. There is consequently a host of able men all over the country of whom every architect can become the commander, and who are ready to serve him with loyalty and zeal. The village workman is as little able to compete with them as the village gossip with the modern newspaper. The conditions of building in our days are consequently more complicated than formerly, for there is a greater development of the principle of a division of labour; but, from the extent and perfection of the organisation, there is a risk of overlooking the debt which is due to the men by whom it has been created.

Among those men an honoured place should be given to the founder and the present representative of the firm of Robert Boyle & Son. It may be said of them that they have made ventilation a certainty, for it can with almost as much safety be assumed that one of their appliances will produce a calculable result, as a pipe will allow of a quantity of water to pass through it that will be proportionate to its diameter. This certainty has brought the science within the sphere of commerce, and it has become as easy to order a ventilator to suit a building as a lock or a boiler. Trade, like virtue, is supposed to be its own reward, but inventors and manufacturers are men, and must desire to have their share of that renown which they see obtained for services that are less useful than theirs. We are glad to see that a biographical sketch of Robert Boyle has at last been published, and from the interest of the subject it is to be regretted that the book has not been made of a larger size. What we have, however, is thoughtfully written, and will well repay perusal.

On the title-page Robert Boyle is described as "Inventor and Philanthropist," and it can be affirmed without exaggeration that his inventiveness was owing to his benevolence. He was a man whose intellect appeared to have drawn inspiration from his heart, and he could pass without much change of manner from his laboratory to a mission of charity in one of the wynds of Glasgow. There was no trace of selfishness in his actions, and in his inventions he was thinking more of the public good than of his own rewards. It followed that in many cases the inventor did not reap all the benefit to which he was entitled.

Robert Boyle was born in Hamilton in 1821, and he died in 1878. His last words were, "I will think no more," and his brain had earned rest by forty years of unceasing exertion, mainly in Glasgow. A well-read student of a religious turn will always find men in that city who can provide him with opportunities of doing good, and Robert Boyle soon after his arrival was recognised as a valuable addition to the civilising forces of Glasgow. He was endowed with many of the qualities

\* *Robert Boyle: Inventor and Philanthropist.* A Biographical Sketch by Lawrence Saunders. London: Gilbert Wood & Co.



of an orator, and there was a frankness about him which prepossessed an audience as soon as he began to speak. A student himself, he was eager to impart knowledge to all, and for many a year he laboured hard as a lecturer. He was not one of those smatterers who take up a science on one day in order to expound it on the next, and who, without much preparation, astonish themselves equally with their audience by their erudition. Robert Boyle was a *savant*, and had the making of a professor in him, although it was never his destiny to teach within a college. In this way there is a resemblance between him and James Watt, who, although gifted with pre-eminent powers of exposition, and a genius for science, was fated to dwell near the gate of Glasgow College, and to mend philosophical instruments for men who were less able than himself.

It is always difficult to trace the origin of inventions. An idea may enter the mind apparently by accident, and yet somehow it grows there, gives rise to others, which, in their turn, become fruitful, and then in time some leading thought is evolved, and the others fall into due relations around it. We can imagine a benevolent man becoming pained by the stuffiness of the rooms in the wynds of Glasgow, and making speeches and writing letters to the newspapers about the misery of the inhabitants. But when the pain arises in the mind of a philosophical experimentalist, it is likely to produce a different kind of result. We may therefore conclude that the origin of that air-pump ventilator which is now in use in a great part of the world, on sea as well as on land, is to be traced to a good man's desire to alleviate the condition of the mass of the population. Unhappily that desire has not been fully realised, owing partly to apathy and partly to the power of the *laissez-faire* principle. And yet there seems nothing unreasonable, since rebuilding the houses of the poor is impracticable, in believing that it would be possible, by a simple appliance, to remove vitiated air quickly from the humblest class of rooms. Reformers discuss colossal projects of improvements which need vast sums to carry them out, and meanwhile great suffering is endured, but to the mind of a self-reliant man like Robert Boyle it will be always plain how much can be done, and at a small expense, by zealous exertion on the part of individuals. In the days when there were only imperfect ventilators it was calculated that by introducing them in the cavalry stables the War Office saved 10,000*l.* a year, as fewer horses were lost; it is then safe to assume that much disease and suffering would be prevented, lives spared, and the productive labour of the country increased if the use of ventilators was rendered compulsory in the houses where the poor live.

Of all Mr. Boyle's inventions, the ventilator is the one which is best known, and from the improvements which have been effected in it by his son it has become paramount among appliances of its class. Our readers are familiar with its strength, simplicity, cheapness, effectiveness, and, since air must move, the automatic character of the apparatus becomes inevitable and continuous. The air-pump ventilator illustrates a great law of nature, and therefore is never likely to be superseded. The power which operates in producing the currents being as constant as gravity, there is no need of that perpetual examination which is so often required in what is called mechanical ventilation; there is no noise, no parts which can become disarranged, and none of those stoppages and other contingencies which are not unknown to people who are indiscriminate in their adoption of apparatus. The introduction of an air inlet tube, and which is connected with a Bunsen burner, allows the temperature of the air to be raised to any degree that is desirable, and in this way the objections to ventilators which are entertained by nervous people, servants, and the like can be removed. Another arrangement no less useful allows of the direct removal of those products of combustion which are among the inconveniences attending gaslights. The success of the various appliances having been demonstrated beyond all controversy, it is not surprising to find it stated in the book before us that Mr. Boyle's services as a consulting engineer are sought "by the first architects and engineers in Europe and America. In the latter country his suggestions have been adopted for some of the most important public buildings, handsome fees being paid for his practical advice." The history of the firm for the past fifteen years would throw a light on the growth of public recognition of the advantage of ventilation; but how much of this is to be attributed to the stout fight made by Messrs. Boyle, father and son, will be suggested from the following passage:—

If we consider the state of apathy which existed with regard to the all-important question of ventilation and sanitation when Robert Boyle and his son first began to move in the matter fifteen years ago, some idea may be formed of their perseverance and industry in raising the subject to the prominent position it now occupies. To their indefatigable exertions and unconquerable determination to continue the good fight against ignorant prejudice and chilling apathy, we are indebted for a great progress which, at the risk of being monotonously eulogistic, it is the object of these pages to encourage

and promote. They drew attention to the question in its relation to the health of the masses, and to their efforts may be attributed, to a very considerable extent, the present position of sanitary science. The difficulties which had to be encountered by these pioneers during the first stages of their crusade against the foul-air demon, and the disheartening indifference and postponements with which all their efforts were received, even by those who should have been their warmest allies, would have crushed the spirits of less resolute men. But these brave and tried champions of health, supported with the knowledge that they were fighting in a good cause—a cause which, in spite of all reverses, must ultimately triumph—were not to be daunted or turned aside from their purpose.

The leading principle which actuated the life of the late Mr. Robert Boyle, namely, the welfare of his fellow-men, has been faithfully adhered to by his son, whose principal aim in developing the great business of which he is now the head has not been so much to amass wealth, as to practically inculcate the lessons of sanitary reform. By laying a sure foundation for future generations to profit by, he has laboured in the hope that it may yet be within the range of the possible to practically realise Dr. Richardson's "City of Health," and banish for ever the dread fevers and diseases which at present scourge the earth. If the acquisition of money had been Mr. Boyle's or his father's object in life, they had opportunities presented them of finding it more easily in other spheres of work; but being men of modest desires, and having no craving after mere worldly aggrandisement or display, they preferred to keep to the path they had chosen. They have expended in the cause of sanitary science and in the practical development of new sanitary inventions enormous sums of money—not less, we are informed, than one hundred thousand pounds—during the past fifteen years.

Considering the difficulties which beset the efforts of such a man as Mr. Robert Boyle to make ventilation readily available, it is unbecoming in a party of amateurs, who arrogated to themselves the office of an arbiter, to make little of ventilating appliances. But he has not been daunted by the efforts of the lovers of primitive happy-go-lucky slits and slashes, and other devices which are more suggestive of humour than of science. One of his latest endeavours has been to produce an appliance which, from its low price, might be capable of tempting the most penurious owner of tenement property in large towns. On this part of Mr. Boyle's career Mr. Saunders writes as follows:—

The notorious "Kew experiments" are a striking example of the pernicious effects of tests being made by unqualified persons, the results of these experiments having the effect of bringing sanitary science into ridicule, and doing the cause an incalculable amount of injury. The *Times*, in a withering criticism of these tests, says:—"The method of testing was incorrect, and therefore the tests are valueless. . . . Neither in the case of either of the cows nor the tubes was their true value as extractors ascertained." Mr. Boyle has had special reasons to study methods of ventilation at small cost, because he has always been deeply interested in providing healthier homes for the crowded poor. He fully realised the very important fact that they needed pure air more than their better-fed and better-clothed brethren. The importance and urgency of the matter was forcibly brought under his notice by Mr. Edwin Chadwick, C.B., a sanitarian justly styled by Dr. Richardson "the father of sanitary reform;" and Mr. Boyle resolved to work out a scheme of ventilation which would meet the requirements of the poorer class of dwellings. The result was the introduction of an economic system of ventilation for workmen's houses, by which a small dwelling consisting of four apartments can be most efficiently ventilated without draught at a cost of four guineas. The secret of the low price of this system is not difficult to discover, as it is provided by Mr. Boyle at cost price, *solely for the use of the working classes*.

This passage is remarkable as showing a return to the original use of the ventilators as a remedy for the defects of Glasgow wynds, and suggests a completion of the circle. It also explains the universal applicability of the ventilator, for when it is found in palaces, poor-houses, theatres, churches, court-houses, colleges, hospitals, prisons, lodging-houses, as well as in residences of all kinds; in men-of-war, yachts, and floating hospitals, there is a stronger testimony in its favour than words can afford. It is satisfactory to learn that Mr. Boyle's exertions for the public health have brought a deserved reward, and the following sketch of the practical sanitarian "At Home" will be read with interest by his numerous friends all over the world:—

Before closing these pages it may be of some interest to the many people, in various parts of the globe, who know the famous ventilating engineer by name only, to learn something of the surroundings and daily life of the present Robert Boyle. He inherited from his father not only the exceptional faculty of adapting means to an end, but also that innate delicacy of perception and sympathetic appreciation of form and colour which constitute a refined and elevated taste for art. This passion for the truly beautiful has induced him to decorate even his offices in a purity of style rarely met with in business circles. His private room at the Glasgow office is unique as an example of decorative taste, and its charm is enhanced by the costly pictures, examples of the old masters—Rubens, Titian, Correggio, Bellini, Paul Veronese, Rembrandt, and many others—which cover the walls. The lesson is a good one, for there is no reason why business men should move in gloomy and unhealthy offices. The mind achieves more under the



influence of higher inspirations, and a cheerful spirit is maintained by the presence of the beautiful. Mr. Boyle's home affords everywhere the same striking evidence of a singularly cultivated taste. His *bijou* residence, "Ranfurly," situated in the "Garden of England"—Kent—is a model of refinement in artistic decoration and arrangement. The furniture of the public rooms was designed by himself, and the carpets were specially woven to match the rare specimens of tapestry hangings and Oriental fabrics. Everywhere selected works of art of unusual merit—pictures, sculpture, and rare china—are arranged with admirable knowledge of the poetry of light and shade and colour, and in the midst of them spring graceful palms and rare exotics, blending their emerald leaves with the rich hues of subdued light falling through the stained-glass windows. We mention Mr. Robert Boyle's faith in the beautiful because art in its purest and most truthful aspect has undoubtedly an influence for good in many ways allied to sanitary progress. A healthy mind is necessary to physical vigour, and it is the conscientious practice of the doctrines he preaches which elevates Mr. Robert Boyle to the rank of a true reformer. Not only in his daily surroundings, but also in his occupations, he endeavours to prove by example the lessons by which health may be maintained and enjoyed. Few men get through a larger amount of really useful work. Conducting correspondence on sanitary matters with engineers and architects in almost every part of the civilised world, and managing with great administrative ability his now colossal business, he nevertheless finds time for recreation; and, although he has not imitated the Prime Minister by selecting timber felling for the renovation of brain and muscle, he contrives in the intervals of work to take in copious draughts of fresh energy by change of scene and air. Skimming over the sea under the broad white canvas of his yacht, tramping through the stubble with his gun, or leaping ditch and fence on his well-trained hunter, he restores the vital forces of nerve and tissue. Manly exercises and recreations are necessary to successful work, and it is fitting that a prolific inventor of sanitary appliances and a devoted champion of Hygeia should demonstrate in his daily life the important lessons necessary to robust health in these days of high pressure.

Since Mr. Robert Boyle made London his headquarters his business has developed to an extent which clearly indicates the real progress made in popularising sanitary appliances. The offices in Mansion House Buildings, where the London business had been carried on for nearly ten years, afforded insufficient accommodation for the rapidly-increasing connections, and the firm was consequently induced to remove to the extensive and handsome premises on Holborn Viaduct. But the requirements quickly outgrew the capacity of even that spacious establishment, and it became necessary to take in equally extensive premises adjoining. At the same time the firm established London works to relieve the increased pressure on the Glasgow manufactory, and suitable buildings were found and fitted for the purpose in the neighbourhood of Euston Road. Still the business grew apace, orders multiplied, from every part of the world the mails brought fresh commissions, the owners of mansions, churches, factories, and workshops anxiously sought the firm to rescue them from the miseries of bad ventilation, and thus the resources of the works were in time insufficient to meet the growing strain, and a more spacious factory has now been provided, the Glasgow works being also enlarged four times its former capacity.

It is satisfactory to learn that Mr. Robert Boyle has no intention of resting content with this most encouraging success, but proposes to avail himself of his professional influence and admirably organised business to extend his sphere of sanitary work. He is making arrangements to deal with the more general and complete sanitation of dwellings, and drainage of towns on improved lines. The question of regulating the temperature of air in buildings is one of great importance to health, and, at the urgent request of architects, he is now engaged in the preparation of a scheme for efficiently combining heating and ventilation in a scientific and practical form, which will insure greater economy and, by the application of heat to the proper parts of the buildings, effectually prevent the cold draughts which are experienced in most public edifices. The chilling currents which have a deadly effect on delicate people are chiefly caused by the defective methods of heating at present in use. Mr. Boyle's plan will save architects the trouble and inconvenience of calling in a separate firm to do the heating, and better results must necessarily follow from the harmony and comprehensiveness of the arrangements.

Notwithstanding the complete success of the air-pump ventilator, the innate restlessness of inventive genius has led Mr. Boyle to discover an improvement, which he has recently patented, and which is said to surpass the present ventilator both in efficiency and simplicity. The improved form of ventilator will, we understand, entirely supersede that hitherto supplied, as it is not considered desirable to submit to the public apparatus of this kind, however efficient, while better results are attainable. In the course of time it is very probable that even the new and improved form will in its turn be superseded, for Mr. Boyle refuses to sit down with self-satisfied triumph. Onward, ever onward, searching for the perfect, adding improvement to improvement, and regarding each achievement as but a stepping-stone to others, the fertile brain of a true scientist never rests. Although Dr. Richardson informs us that "since these excellent ventilators have been introduced, we have now got perfect methods of ventilation," we have reason to anticipate some startling discoveries as the results of Mr. Boyle's ceaseless experiments and strivings after perfection. No apology is necessary for these commendations. Professional success of no ordinary kind, and public work carried out with remarkable ingenuity and thoroughness, justify us in setting forth this young man as an example worthy of note. Better than all the platform platitudes of sanitary reformers is the actual work accomplished. He has worthily followed in the footsteps and carried on the unfinished labours of his distinguished father, and we regard with lively hope the prospect of a

life begun so well, and devoted with such singleness of purpose to the public weal.

In conclusion, we can with confidence advise our readers to obtain the book for themselves. It is full of interest as an account of a useful and benevolent life, and is also a very complete record of the progress of science in dealing with the difficult subject of ventilation.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### MONTAIGNE'S HOUSE.

THE French papers contain a little more information concerning the destruction recently of the château of Montaigne, the essayist, of whose works the British Museum possesses two old translations. One belonged to William Shakespeare, the other to Ben Jonson. The house is situated in the canton of Velines, near the village of Montaigne Saint-Michel, and about thirty-five miles eastward of Bordeaux. The part of the building where Montaigne was born in 1553, and which, as the home of his ancestors, he held in deep affection, no longer exists, but happily the library tower, where he studied and spent a great part of his days has been preserved from the flames. In Carlyle's "Life of John Sterling" there is mention of a pilgrimage in 1836 to the house, which, from its out-of-the-way position, is almost unknown to English travellers. Emerson also refers to the journey. "I became acquainted," he says, "with an accomplished English poet, and found that from a love of Montaigne he had made a pilgrimage to his château, still standing near Castellan, in Perigord, and after two hundred and fifty years had copied from the walls of his library the inscriptions which Montaigne had written there." The following is Sterling's account of the place, which he described as "an unpublished narrative of a visit to the spot, by a young man who was at one time supposed capable of a future improvement in practical sense and worldly respectability, such as he is far from having realised":—

The part of Montaigne's house which we first reached was the tower described by him in his essay "On the Three Commercies" (iii. 3) as containing his library and study. It is a plain, round structure at the south-eastern corner of the château; a dead wall runs from it on either side at right angles, and rises to about half its height. This is in reality the exterior of ranges of outbuildings, which form two sides of the courtyard. In this wall, close to the tower, and facing us as we approached, was a small gate, through which we found entrance. The château itself was now on our left, running along the western side of the quadrangle. It is a high building of grey stone, evidently very ancient, and probably untouched, except for repairs, since the days of Montaigne's father. There are a considerable number of windows scattered very irregularly over the front. Near the middle at either side of the small unornamented entrance are two large and high towers of unlike architecture; the one with deep machicolations, the other without them, and both with conical roofs. If erected, as I presume, by Montaigne's father, the building must be about three hundred years old; the whole place has now an air of sluttish neglect, though not at all of decay. It is now inhabited by an old gentleman, formerly a military man, whose civility we should ill repay by recording any idle accounts of his simple establishment and very agreeable conversation. The house is only one room deep, and behind it runs a long and broad terrace, covered with grass, and with some trees growing upon it—among others a large horse-chestnut. It is bordered by a stone balustrade, which rises on the edge of a steep, wooded bank, and has beyond it a very extensive prospect over a flat country, with slight eminences on the horizon, marked towards the north by the village and château of Mont Peyroux, which in Montaigne's day was a sort of dependence on his seigneurie, and belonged to his younger brother. Near it, and still higher against the sky, are the ruins of the château of Gurson, destroyed in the Revolution, and which seems to have been a castle in our English sense of the word—that is, a feudal abode constructed for defence. It was probably the residence of the lady to whom Montaigne addresses his "Essay on Education" (i. 25). The whole prospect is woody and cultivated, but without water or any very remarkable outlines, open, airy, quiet, and sufficiently prosperous. The old gentleman told us that he was possessed of eleven *métairies*, or farms, with the château, but that Montaigne had held eighteen. The property had come by marriage to the Ségur family, who had taken the name of Ségur de Montaigne. They sold the estate to the present owner, who in turn was ready to dispose of it if he could find a purchaser.

After taking leave of our host we returned to the corner



tower, which we examined throughout, and were much interested by the minute agreement of its present state with everything recorded in Montaigne's description. This, too, was evidently not a modern and factitious correspondence, but secured by the abstinence of the successive owners from any changes, however slight. The ground-floor retains the appearance of having been once a small chapel, though now dark and dilapidated. The first floor, which was the sleeping apartment of the Gascon philosopher, does not look as if it had been applied since his day to any other purpose. The third and last storey is that so particularly described by its occupant as having contained his library and study. These are his words (iii. 3) :—

When I am at home I the oftener visit my library, from which I at once survey all the operations of my family. 'Tis over the entrance into my house, from whence I have a view under me of my courtyards and garden, and of most of the offices of my house. There I turn over one book, then another, on various subjects, without order and without design. One while I ruminate, another while I copy and dictate, as I walk to and fro, such whimsies as these in my Essays. 'Tis in the third storey of a tower, of which the first is my chapel; the second a chamber and its closets, where I often lie to be retired; above it is a great wardrobe. This was formerly the most useless part of my house. I there pass away the most of the days of my life, and most of the hours in the day, but am never there at night. At the end of it there is a very neat closet, with pleasant window-lights and a fireplace. And was I not more afraid of the trouble than of the expense—the trouble which drives me from all application to business—I could easily join to it on each side, and on the same floor, a gallery of 100 paces in length and 12 in breadth; there being walls already raised, though for another design, to the height that is requisite. Every retired place should have a walk in it; for if I sit still my thoughts sleep—my fancy does not operate so well as when 'tis put in motion by that of my legs. They who study without a book are all in the same condition. The form of my study is round, and has no more straight than what is taken up by my table and chair, so that the curve presents me with a view of all my books, in five rows of shelves, quite round me. It has three noble and free prospects, and is 16 paces in the diameter. I am not so continually there in the winter, for my house is perched upon an eminence, as its name imports, and this part of it is most exposed to the wind, which pleases me the better, for not being so easy of access, and a little remote as well for the benefit of exercise as for being more retired. 'Tis there that I am in my kingdom, as we say; and there I endeavour to render myself sole monarch, and to sequester this corner from all society—conjugal, filial, and civil.

This passage would answer in most respects as a description of the spot at this hour, though he who wrote it has been dead two hundred and fifty years. The room still overlooks the entrance of the château, and from three windows, in different sides of the circuit, commands the garden, the court, the house, and the outhouses. The books, indeed, are gone; but the many small rafters of the roof are inscribed on their lower faces with mottoes and pithy sentences, which recall, as by a living voice, the favourite studies and thoughts of Montaigne. Such are these few hastily transcribed in a note-book :—"1. *Solum certum nihil esse certi, et homine nihil miserius aut superbius.* 2. 'Ἀλλοίωσιν ἄλλον θεῶν τε κἀνθρώπων μέλει. 3. Ταράσσει τοὺς ἀνθρώπους οὐ τὰ γράμματα, ἀλλὰ τὰ περὶ τῶν γραμμάτων δόγματα. 4. *Quid superbis, terra et cinis!*—Eccl. x. 5. *Vae qui sapientes estis in oculis vestris.*—Eccl. v. 6. *Favere jucunde presentibus. Cætera extra te.* 7. Παντὶ λόγῳ λόγος ἴσος ἀντίκειται. 8. *Nostra vagatur in tenebris, nec cæca potest mens cernere verum.* 9. *Fecit Deus hominem similem umbræ post solis occasum.*—Eccl. vii."

The chapel still shows the recess where stood the altar, and there are the remains of colours and gilding on the defaced coats of arms around the walls. The bedroom floor presents nothing remarkable, but that above, in which are the inscriptions on its rafters, preserves the exact form described by its ancient occupant. The paces of Montaigne must have been of about a foot and a half, for the diameter of the tower inside is about 24 feet. The circle is at one part cut by two straight walls, joining in an angle, being the portion which he speaks of as adapted for his seat and table. The three windows, affording a rich and free prospect, are still unchanged. There is a sort of closet opening off the room, with the traces of painted ornaments on the walls, a fireplace, as he mentions, at one end, and a window, which entitles it to be spoken of as *très plaisamment percé*—having a pleasant window-light, and which, though directly overlooking the courtyard, furnishes a view, above the northern line of offices, towards Mont Peyroux and Gurson.

The whole appearance and position of this apartment seem especially characteristic of Montaigne. The cheerfulness, the airiness, the quiet, the constant though somewhat remote view of natural objects, and of the far-spread and busy occupations of men—all are suitable to him. The ornamenting the joists of his chamber roof with several scores of moral sentences was the work of a speculative idler, and their purport is always, so far as I saw, suitable to his sceptical but humane and indulgent temper. The neglect of all elegance and modern convenience in the house, together with its perfect preservation from decay, add to the interest, and seem to prove that it is

maintained in its old completeness and bareness, not from any notion of use, but out of respect for the memory of its celebrated owner.

Since Sterling's visit the house changed owners two or three times. In 1850 it became the property of M. Magne, a gentleman who valued it on account of its associations with Montaigne. An enthusiastic lover of the philosopher, it was his wish to live and die in Montaigne's chamber. The old Gascon sceptic has admirers all over the world, and it is not surprising that during the two days after the fire there were two hundred messages transmitted to and from the local telegraph office, a greater number than passes through the wire in the course of a year.

## NORMAN ARCHITECTURE NEAR MANCHESTER.

A PAPER was read by Mr. Robert Langton at the last meeting of the Lancashire and Cheshire Antiquarian Society on "The Remains of Norman Architecture in the Neighbourhood of Manchester." The author said that Lancashire was not rich in Norman architecture, for several reasons, but what traces there were of such work were peculiarly interesting. He briefly described the remains to be found at Eccles, Bolton, Flixton, Middleton, Radcliffe, and Prestbury. The walls of the present parish church at Eccles were no doubt, he said, full of portions of the Norman church, and till about twenty years ago the north wall of the choir exhibited in its east window and gable a very fair example of decorative work. The church of St. Mary, Bolton, recently entirely rebuilt, was probably erected in Anglo-Saxon times, since fragments of Saxon crosses and carved stones had been found in the walls and foundations of the fifteenth-century church lately taken down. With those were found some very interesting relics of good Norman work. There was a church in Flixton in Norman times, and, although it had been partly rebuilt twice, in the fifteenth and eighteenth centuries, the old materials had been used, and traces of the original work were still to be seen. St. Leonard's Church, Middleton, was a fifteenth-century building of considerable interest. It replaced a very interesting Norman church, remains of which were still in existence. The church of St. Bartholomew, Radcliffe, was altogether a very interesting specimen of a Lancashire parish church, and was remarkable alike for its Norman and decorative features. The Rev. E. F. Letts alluded to the traces of Norman or Early English work found in the cathedral. Mr. Langton, however, demurred to the assumption that any traces of a Norman church had been discovered there. He believed there was a Saxon church in Manchester, and there might have been alterations in Norman times, but he did not think there was ever a Norman church where the cathedral now stands.

## EDINBURGH ARCHITECTURAL ASSOCIATION.

THE usual fortnightly meeting of the Edinburgh Architectural Association was held on Monday. The president, Mr. G. Washington Browne, occupied the chair. After some preliminary business, the chairman called upon Professor Baldwin Brown, B.A., to read his paper entitled "Gottfried Semper and his Theory of Architecture." He described Semper as one of the most distinguished of modern German architects, and, as a writer, famous for his contributions to the history and theory of the art he practised. His career was especially interesting to natives of this country, as part of his life was passed in London, where he worked for some years in connection with the Science and Art Department. The leading events of Semper's life were briefly summarised. Born in 1803 at Hamburg, he studied first at Munich and then at Paris. Leaving the latter city after the Revolution of 1830, he travelled in Italy and Greece, where he gained that insight into the principles of ancient architecture of which he made good use later on in his classical work on "Style." In 1834 he was made director of the Academy of Architecture at Dresden, where he divided his time between teaching and the carrying out of important architectural works, such as the Dresden Theatre. Driven thence by the Revolution of 1848, Semper came to London, where he was invited by the Prince Consort to conduct classes under the newly-established Science and Art Department. After a few years he removed to Zürich, where he again had the superintendence of great buildings, and where in 1860 he published his two volumes on "Style." Semper's last practical work as an architect was in connection with the colossal buildings erected on the "Ring" at Vienna, where he finished his design for the Opera House and the new Museum. He died in Italy in 1879. Going on to speak of Semper's contributions to the literature of his art, Professor Baldwin Brown gave a short account of



Semper's book on "Style," which contained, he said, in the first place a full and admirable discussion on the industrial arts, the materials employed in them, and the style of treatment which the artist should adopt in dealing with different purposes. In the second place, there might be found in the work the materials for a history of the constructive and ornamental arts of antiquity, which should do for ancient times what Jules Labarte has done for Byzantine and Mediæval in his "Histoire des Arts Industriels," while there were dispersed through the volumes profound and suggestive remarks which might form bases for a philosophy of art. As a specimen of Semper's treatment of the industrial arts, a *résumé* was given of the first few chapters of his book, which deal with the materials of the textile arts, and the principles to be followed in the decoration of walls and floors. Semper's general theory of architecture was next referred to. Architecture as a fine art did not, in his view, begin with the shelter or fortress of primitive man, but in structures raised for purposes of religious or patriotic commemoration. Early monuments of architecture were in many cases, like the temple of Solomon, merely copies in permanent materials of festal structures formed of wooden framing and covered with rich hangings and garlands. A few words on the bearing of this theory on the history of architecture up to the time of the Romans concluded the paper, on which discussion was invited. At the conclusion of the discussion, Professor Brown was accorded a hearty vote of thanks, which was acknowledged.

### FOREIGN POTTERY.

A LECTURE was delivered on Saturday at Burslem by Mr. Woodall, M.P., on "Foreign Potters and Pottery," in which an account was given of what had come under the lecturer's notice as a member of the Royal Commission on Technical Instruction. Mr. Woodall said that for convenience he would classify the Continental potteries under three heads. First, there were the great porcelain works of Sèvres, Dresden, and Berlin, which had been founded and were sustained with only partial regard to commercial considerations, and the more costly productions of which were distributed as gifts to the rulers and to the public museums of other countries. The Prussian and Saxon Governments were now endeavouring to make their works self-supporting, and both at Dresden and Berlin a large trade was being done in articles of utility or of simple ornament. At Meissen there were at least a hundred workmen painting the familiar blue-and-white dessert services. The characteristic Dresden figures were produced at many private works also, and plaques and porcelain pipes were painted with remarkable cleverness and facility. At the Berlin works perhaps the most notable circumstance was that the ovens were all fired with gas from generative furnaces. The three great works of which he had spoken were under the direction of men of the first eminence as chemists and artists, and their achievements were too well known to call for more than passing notice. With regard to the potteries which he placed in the second category, he said their name was legion. There were to be found in every direction works of comparatively small extent, the productions of which were characterised by peculiar merits of their own, as shown by samples he produced for inspection. It was, however, only possible to refer to a few of these works by way of illustration. A few miles behind the great fortress of Ehrenbreitstein there were some ten villages in which, from an abundant local clay, the old Flemish stoneware was manufactured, and a very large trade was done in a great variety of these articles. The clay was thrown, then pressed into moulds, and when dry painted with cobalt. In one of these small factories he saw fifty girls so employed, and they seemed to earn the same wages they would get in Burslem. A technical school had been established at Höhr, the principal village, where the course of instruction included the modelling and actual production of the objects designed by the pupils. In the Black Forest and in Switzerland there were many small factories, at which the ware produced was ornamented by patterns, the outlines of which were scratched in the clay state, and then filled in with coloured "slips." The Governments had rendered great service to these and similar industries in many of the German States by the establishment of schools and museums. In the Black Forest there were some important manufactories, chiefly employed in making majolica and white ware for the American markets. In the petty States known as the Forest of Thuringia the cheap china figures which found their way everywhere were produced chiefly at the houses of the workpeople, from clay carried from the factory; and there, too, he had seen the gilt and painted china mug with inscriptions in English, which were to be had for 2½d., and the teapot stands embellished in like manner and sold to the trade for 6d., to find their way to Rhyl, Brighton, &c. The wages appeared to be about half the English rate, and house rent was quite as high as in the towns. The women rarely found em-

ployment in the potteries. Probably the most ingenious glass-workers in the world were found in the district of Thuringia, and he knew of no people with whose comfortable and intelligent appearance he had been more impressed. There were large factories so remotely placed that a waggon could only make one journey to the railway station each day. Most of their material had to be brought and all their manufactures sent long distances, and yet they were evidently, under many disadvantages, competing severely with English makers. Referring to the revival of the historic pottery at Delft, Mr. Woodall said that one of the finest technical colleges in Europe was to be found there, and its instruction was made directly applicable to the pottery, and the apprentices were taught drawing and painting by one of the principal professors, with results indicated by examples of the ware on the platform. Having briefly glanced at several other places, Mr. Woodall spoke of the potteries at Vallauris, and said there were many such to be found along the southern coast of France; but none more interesting than the well-known works of M. Clement Massier, at Golfe Juan, near Cannes. Specimens of the products of this factory, covering a wide range, from terra-cotta balusters and quarries to delicate statuettes, were exhibited by the lecturer, who pointed out that the vases and other like ornaments, resembling Linthorpe ware, were distinguished by the richness and variety of their coloured glazes. The productions of M. Massier were priced at what the lecturer considered very low figures. Not more than half a dozen women were employed in the factory, and under the new French Factory Act boys and girls were not employed until fifteen years of age. Turners earned from 2½ to 4½ weekly, and the less skilled workmen, who were chiefly Italians, earned 3s. per day. The working hours, exclusive of meal times, were ten every day. Rents were as high as in England, and the cost of many necessary articles higher. Compulsory military service did not appear to have any injurious effect, and its interference with the ordinary business of life was taken very much as a matter of course. Turning to the third class of works, the hon. member gave an instructive account of Limoges and its porcelain factories, of its splendid museum of ceramics, and of the great national school of decorators' art which had been established there for gratuitous instruction of all concerned in the local industry. At Saarguenines, which, although within German territory since the war, must be considered one of the great centres of French earthenware manufacture, M. de Geiger, who employed some 3,000 workpeople, modestly said he was obliged to rely upon ingenious machinery to enable him to compete with the superior skill of the Staffordshire potters; but he was, nevertheless, seriously and successfully competing with them. There, as at Maestricht, in Holland, were to be observed the very perfection of economic method. In conclusion, Mr. Woodall said he thought there was no reason why English potters should despair of being able to hold the position of which they were so proud, but they would see from what he had told them that this could only be done by their carefully applying themselves to the study of everything which could by any possibility have a bearing upon their industry.

### ST. CLEMENT'S CHURCH, ROWDELL.

A PAPER on the church at Rowdell, in the Isle of Harris, was read at the meeting of the Society of Antiquaries of Scotland on Monday. The author was Mr. Alexander Ross, architect, of Inverness. This church, situated at the south-east angle of the island, is cruciform in plan, with a square western tower. At some time it seems to have become ruinous, and the upper parts of the walls of the nave and tower have been rebuilt from old materials without much regard to character or design, a number of fragments of old moulded corners and sculptures having been built into the tower promiscuously, and the figures placed in most unlikely positions. The lower portions of the walls of the nave, the transept arches, and the side and end windows of the chancel end, are evidently of early date. There are two tombs with recumbent effigies recessed into the wall of the nave on either side of the south transept, the arches of which are of contemporary workmanship with the arches of the transept. The east window, of three lights, is cut out of hornblende schist, and is a remarkable work of its kind. The mouldings and labels on windows and tombs are decorated with rows of nail-head ornament. The principal tomb is, perhaps, the most remarkable example of its kind in Scotland. It contains the effigy of a knight in armour, of plate corresponding to the period indicated by the inscription in black letter on one of the panels at the back of the recessed arch, which attributes its erection to Alexander Macleod, son of William Macleod of Dunvegan, in 1528. This is the well-known Alaster Crotach (the Hump-backed) of Highland tradition and history; and the fact that the arches of both the tombs are of contemporary work with the arches of the transepts suggests that the Alaster Crotach may



have been, as Buchanan states, the founder of the church, at least in its present form. There is reason to believe, from the lands being called Ardmanach in the charter granted to Alister Crotach in 1498, that there may have been previously a monastic foundation on the site, of which, however, no traces now remain. The tomb of Alister Crotach is one of the most remarkable and richly-carved monuments in Scotland. Over his effigy, on the back of the recessed arch, and around its upper margin, there are no fewer than twenty panels of sculptures of religious symbolism, including representations of the Virgin and Child, *a pieta*, the Last Judgment, or St. Michael weighing souls and the devil sitting by as an interested spectator, a hunting scene, a galley, bishops or abbots, angels and nimbed personages in great variety, the total amounting to upwards of forty separate figures, and for the most part still in fair preservation. The other tomb is plain, but there is a carved panel representing the Crucifixion over the crown of the arch. A third effigy, for which there is no mural arch, lies in the south transept.

### THE ANTWERP EXHIBITION.

ON account of new demands for space, 20,000 more square metres of buildings are to be added to the Antwerp Exhibition Palace, which covered already 76,210 square metres on the first of last month. The concert-hall will cover a superficies of 3,000 square metres. The various countries will occupy, in square metres, superficies of—Belgium, 25,000; France, 20,000; Germany, 6,500; Italy, 4,000; England, 3,600; Austria, 3,000; the United States, 2,000; Russia, 2,000; Holland, 2,000; Sweden and Norway, 1,300; Canada, 1,200; Luxemburg, 600; Spain, 500; Switzerland, 500; Brazil and other States of South America, 200; San Salvador, Hayti, and Turkey, 150; Portugal, 100; Monaco, 100; Servia, 60; and Paraguay, 150.

### DRAINAGE REGULATIONS IN GLASGOW.

THE following regulations have been proposed to be carried out in Glasgow:—

1. The positions and sizes of all drains, pipes, cesspools, or traps, and all soil and rain-water pipes and conductors, shall be shown distinctly upon the plans submitted to the Court, and the weights per foot of the lead or iron soil pipes, conductors, and cesspools to be marked on said plans in figures.
2. Forty-eight hours' notice must be given to the Master of Works at his office, 74 Hutcheson Street, previous to commencing laying any drains. The party giving said notice will receive a card of permission to open the street, which card will be held as proof of the information having been lodged.
3. All connection between drains and the public or common sewer will be made by the workmen of the Statute Labour Department, and shall be paid for by the proprietor.
4. Every drain-pipe must have an uniform fall of not less than one inch to every lineal yard, and every pipe must be thoroughly packed and resting entirely on the solid. When, in the opinion of the Master of Works, the ground is soft, made up, or requiring to be made up to suit the levels, it shall be in his power to order concrete to be used under and around the pipes.
5. The joints of all pipes shall be thoroughly cemented, and any cement which may project above the bottom of the pipe inside must be carefully removed.
6. Sufficient traps and ventilation must be provided and fixed in position to the satisfaction of the Master of Works.
7. No pipes to be covered until inspected by the Master of Works or his representative; and no junction connecting drain-pipes and plumber work to be covered up until examined and passed by him.
8. The Master of Works to have power to use the smoke test on all drains and plumber work before the building is occupied, and at any other time he may consider necessary; all expenses connected with the test to be paid for by the proprietor of the property.
9. No dwelling-house to be occupied until a certificate has been given by the Master of Works that the drains and cesspools, with traps, have been properly constructed, and the house otherwise fit for occupation.
10. Proprietors and contractors to give every assistance to the Master of Works, or the persons appointed by him, for the purpose of making the necessary inspections.

The Master Wrights of Glasgow have formed an association for the purpose of promoting good feeling among those engaged in the trade, a thorough understanding of what might be required from time to time in the regulation of prices, and generally to consider all matters affecting the interests of the trade.



### Election of Surveyors of Dilapidations for the Diocese of Norwich.

SIR,—In reference to the paragraph in your last issue relating to this matter, will you allow me to state I was elected by a majority of twenty votes, twenty-four votes being recorded in my favour with four for the next candidate.

I am, Sir, &c.,

E. F. BISSHOPP,

Surveyor of Dilapidations for the Diocese of Norwich.  
32 Museum Street, Ipswich:

February 10, 1885.

### The Exhibition of Drawings at Conduit Street.

SIR,—The inhabitants of the earth all experience the illusion that the sun is a small disc travelling through the sky, for the same reason that the passenger in a railway carriage often thinks his train is moving when really it is the neighbouring train on the other pair of metals that is in motion. The opinion foreigners entertain about us is very often the judgment of history, for it is formed by persons placed outside our traditional prejudices and our temporary passions and interests. Last week the show of architectural drawings in Conduit Street received the visit of an artist from the Moon, and I was particularly amused by the remarks he made to me. Nothing could be more refreshing than his barbaric ignorance of the great names tacked on to the drawings. Our Barrys, Scotts, Streets, Ruskins, to whom we bow down with awe and reverence, produced no more influence on him than Browne, Jones, or Robinson, and his uncultured mind could evidently go no further than the drawings hung on the wall. "But, my dear sir," I pleaded, "the drawing you are praising is by a nobody, and the drawing you are so unmercifully pitching into is by the great XX, a man whose drawing is held in the highest esteem by all his fellow-countrymen." He looked as if he really did not understand my meaning, yet he has somehow learnt to speak English pretty fluently. I repeated my observation more strongly still and warned him that, if he did not show the highest appreciation for the works of XX, he would only be looked down upon as a poor benighted traveller from the Moon, and despised accordingly, unless he would consent to give his help to a British mission to convert his heathen, untutored, fellow-countrymen to a due appreciation of the works of the great XX. Would you believe it, Sir, this native of only a satellite had the impudence to shrug his shoulders and say he did not care a fig about XX, and even about Y and Z, but he judged works of art according to principles held as sacred in the Moon as the names of X, Y, and Z were held on earth.

"We are taught," said he, "from early childhood to distinguish two totally different elements in drawing. On the one hand, we recognise the science of drawing, which we teach in our schools at the same time as reading, writing, and arithmetic. This consists in imitating an object with such accuracy as to rival the results of your photography. It is a science entirely dependent on physical aptitudes: of hand and eye, as well as a training in drawing geometrical figures, such as squares and triangles, by means of which the draughtsman judges the dimensions of every part of the object he is drawing. In the Moon this kind of drawing is considered as part of the science of surveying and mensuration; its works are called diagrams, and are not considered works of art, although we know that on earth there are numerous makers of diagrams held in high esteem who think themselves the most excellent artists, and call those men daubers that would be regarded as artists in the Moon. If, with us, the science of drawing is nothing but geometry applied to the representation of objects, the art of drawing is knowledge of man applied to the expression of his ideas. It is entirely founded on the following well-experimented fact:—Take two pieces of cardboard, each bearing a name clearly printed thereon, put them an inch apart one behind the other, at about 2 feet from your eyes, and so placed as to see them both at one glance. Then rivet your attention on the first card, and you will see the print thereon sharp and black; but, as to the second card, you will just have an impression that it is there. You will neither see clearly its outline, nor the word printed thereon. Immediately your attention is called upon the second card, in an instant, short but perceptible, the first card is blurred, and the second card appears in full clearness. From this observation, the artists of the Moon have concluded that it is not possible for a man to see two things at one time equally clearly, and that, if he gives you a faithful drawing of what he sees, he will delineate one object distinctly, the other blurred. This is no doubt one of the imperfections of our nature, but our artists have found therein a powerful means of expressing



what they feel. In their drawings the blurred objects are those that do not interest them, the sharply defined are those that have called forth their special attention by awakening some tender memory, some enjoyment, some terror, or other emotion. Through the pictures of our artists, it is easy to look in the minds of their authors, for we have a record there of what charmed the authors and what did not. In looking at their works, our connoisseurs before all things ask what inspired the man—the bold outline, the graceful detail, the contrast of light and shade? They call this the intention of the artist; if they cannot find any intention whatever, they pronounce the picture a diagram and turn their backs to it, for the art-lovers of the Moon seek for *emotion*, not information. It follows therefore that, to the Moonites, the more work a drawing contains, the less art it implies; when a picture is perfect in every detail like a photograph, it ceases to be a work of art at all, and ranges as a very conscientious and praiseworthy diagram. As I was painting the portrait of an ugly yet pleasant lady of the Moon, my master told me, 'Paint the eyes, never mind about the rest.' He was right, for she existed to those who loved her but by her eyes, beaming with wit and kindness. Such is our way of considering art in the Moon.

"Of all your drawings the one that pleases me most is the sketch of an Egyptian temple by Sir Charles Barry. It is clear in outline, sober in detail, full of repose, and expresses throughout a clear and calm judgment. We have there an early promise of what its author was one day to achieve as an architect—broadly-conceived plans, noble and simple compositions. The coloured view of Athens by Professor Cockerell aims at the same ideal of simplicity, but less successfully than Barry; it is more finished, therefore less artistic. We have the feeling that with care and application we could achieve as much, whereas Barry's sketch, in which the essentials only are delineated, can be drawn by no lesser genius than his own. To the same school of drawing belong also the sketch of a church at Venice by Mr. Sydney Smirke and the portal of a castle on the Loire by Mr. Lethaby. Curiously enough, this style of drawing, which is essentially architectural drawing, is very sparingly represented at this show of the Institute; and, with the exception of the above artists, all the other draughtsmen seem to have been more or less preoccupied with pictorial effects when they have succeeded in making artistic drawings. Alas! there are a great many, and of the names you utter with bated breath, where it is useless to seek for any intention at all, whose drawings are nothing but diagrams to a native of the Moon. Such are the porch of Bristol Cathedral and a piece of the Law Courts by Mr. G. E. Street; but such is not the sketch of men in armour from Innsbruck Museum, done by the same artist in 1880, where every stroke tells of the enjoyment he felt in his subject.

"Of the pictorial artists, we have the men who delight in light and shade, at the head of which is Mr. Ernest George, in his pen-and-ink sketch from Holland, in which he nearly equals the etchings of his master, Rembrandt himself. In his colour sketches he is not so fortunate, as can be seen in his sketches at Chambord and Barcelona, which, although taken in very different regions, are identical in local colour and atmospheric effect. Next to Ernest George, as a light-and-shade artist, comes Mr. Haig, with his pen-and-ink drawing of the Cathedral of Seville. There is more labour, more of the finish of a photograph in Haig's drawing, and therefore, in my opinion, it ranks less high than Ernest George's sketch; on the other hand, Haig's coloured drawings bear the impress of faithful colouring. Then Pugin's Street in Mayence speaks of the artist; its admirable distribution of light and shade, and its bold sky-line, have alone delighted its author, for he drew nothing else, and was contented with vaguely indicating a detail here and there. It is truly a work worthy of the Moon.

"Then there are the painters of light and air, such as David Cox and Thomas Allom. After them we find the colourists, of which Mr. Rooke is *facile princeps*. The tones of his colours are so correct that we feel the very texture of the surfaces he represents, be they marble or plaster; it is no hazy colouring but solid matter we have before us. Then comes Digby Wyatt, not as an imitative but as a decorative colourist. See the red tablecloth introduced to harmonise as a high note with the red in the decoration of the vaults of San Bernardo. To these belong also Mr. Aitchison, in whose views of San Lorenzo and St. Mark correct colouring is united to sparkling effects of light and shade.

"The Impressionists are also represented in the Conduit Street collection by Mr. Waterhouse, with his sketches at Chartres and Angoulême, where the painter is enraptured with some striking effect, which he records. Sometimes it is the bold outline, sometimes it is only what gave expression to the original which he jots down on his paper—everywhere one feels the delicate nerves of a true artist. Next to him comes the pseudo-Impressionist, Mr. Ruskin, who feels not, but admires and imitates those who feel, and therefore gives us a caricature of their style, which his friends, no doubt, vastly admire.

"We now come to pen-and-ink drawings, made from designs for such commercial purposes as nailing a client or photolithographing in a periodical. The word 'commercial' freezes us up, but yet I cannot refute that there is a very poetical conception in the general grouping of the drawing by Mr. Norman Shaw. As a pen-and-ink drawing the Moonites would prefer that by Mr. J. Langham. There is a clear effect of light and shade which strikes us at the first glance: the landscape is highly finished by one who knows how to draw correctly trees and clouds, yet it is kept so subordinate to the building that we must make an effort to notice it. A higher praise to an architectural drawing we cannot give. Close to this is a drawing by Mr. M. B. Adams. It is perfect in workmanship, but he who admires Mr. J. Langham cannot be charmed with his neighbour. He might be by the sketch of Mr. W. E. Nessfield, which bears the mark of artistic intention, although the landscape reveals want of study from nature.

"The shaded drawing by Professor Brune is a model of what an architectural drawing should be: it is intensely accurate and clear, being a diagram for the builder to work from, and yet artistic intention is by no means absent. See the way the statues are drawn, the heads blocked out without a single detail. Does not the draughtsman say thereby, 'I am an architect; statues are for me only masses of light stone against dark backgrounds; whether their faces smile or weep I do not care'? Can anything be more clearly expressed?

"In the drawings of past masters such as Jones, Wren, the Brothers Adam and others, we recognise the cause of the little favour shaded drawing has found in England. It was done, but done so badly that it was neither pleasing nor useful. The shades were not drawn in with mathematical precision as in the work of Professor Brune, nor were the colours and shades graded, by which colours and shades look like what they mean, and not like so many black or coloured patches on white paper." "Stop, my friend," I exclaimed, "and take the next express for the Moon, for I fear you are on the road of attacking the great XX himself, and beware of my fellow-countrymen if you touch their idols." Our critic from the Moon turned round, and saw the room full of angry eyes of British architects fixed indignantly upon him. He became pale, quaked with fear, and suddenly darted upwards through the cupola of the ceiling, and has never been seen again. Such is a truthful account of this remarkable visit from our satellite.

Your obedient servant,

BRITISHER.

## NEW BUILDINGS.

**Maryport.**—Works for the erection of Messrs. Carr & Co.'s warehouse, at the Senhouse Dock, Maryport, have been commenced. The building will have a frontage to the new dock of 250 feet, and will cover an area of 15,000 feet super. It is being erected from plans and under the directions of Mr. T. Taylor Scott, architect, of Bank Street, Carlisle. Messrs. A. & J. Main & Co., of Possilpark, Glasgow, are the contractors; the foundations were let to Mr. A. Mackenzie, of Maryport, and the timber stage to Mr. John Bell, also of Maryport.

**Newcastle-under-Lyme.**—Post-office buildings lately in course of erection have been completed at a cost of about 1,600*l*. The style is Queen Anne, and the building is of red brick with Beggar's Well stone dressings. Plans, &c., have been supplied by Messrs. Chapman & Snape, architects, of Newcastle, jointly with the borough surveyor, Mr. James Pattison, under whose supervision the work has been carried out by the Rose Vale Brick and Tile Company.

**Hospital and Dispensary, Darlington.**—On Friday, the 6th inst., the new hospital and dispensary was formally opened by Mr. J. B. Hodgkin, mayor, on which occasion his worship was presented with a silver key by the architect, Mr. G. G. Hoskins, F.R.I.B.A. The key, which has been specially designed by the architect, and manufactured at his expense by Messrs. Harrison & Son, Darlington, is of solid silver, weighing four ounces. The handle or bow of the key is represented by a flaming heart of burnished silver, supported by beautifully designed frosted silver scrolls and leaves of a conventional character. One side of the heart bears the inscription, "Presented to J. B. Hodgkin, Esq., Mayor of Darlington, on the occasion of his opening the new hospital and dispensary, February 6, 1885," and upon the reverse side of the heart are inscribed the words (taken from 1 Cor. xiii. 13), "The greatest is charity." The stem of the key, besides being richly engraved, bears the words "Designed and presented by G. G. Hoskins, F.R.I.B.A." In addition to the aldermen and members of the Town Council and Hospital Committee, there was a large assembly of the general public to witness the ceremony. The several contractors have been—For excavator, bricklayer, and masons' work, Messrs. J. W. & M. McKenzie, of Darlington; carpenter and joiner's work, Mr. R. T. Snaith, Darlington; plasterer, Mr. R. M. Ormerod, Carlisle; slaters,



Messrs. G. Pattison & Son, Darlington; plumber and glazier's work, Mr. Emmerson Smith, Darlington; and painter's work, Mr. John Law, Darlington. Mr. Joseph Hindmarch was clerk of the works.

### CHURCH BUILDING AND RESTORATION.

**Adlington.**—A new church dedicated to St. Paul has been opened. It is built of stone, in the Early Decorated style, from the designs of Messrs. T. D. Barry & Sons, architects, of Liverpool, by Mr. T. Winward, builder, of Wigan.

**Middleton Junction.**—The church of St. Gabriel has been opened. The style of the building is Early English, and it consists of chancel, nave, north and south aisles, south porch, &c. The architect is Mr. A. W. Smith, Manchester.

**Ladhope.**—The foundation-stone of a church for the Ladhope Free Congregation has been laid. The buildings comprise church, large hall, session house, vestry, &c. The architects are Messrs. McKissack & Rowan, of Glasgow. The cost is estimated at about 4,000*l*.

**Gateshead.**—The foundation-stone of the church of St. Paul's, Teams, has been laid. The building is being erected by Messrs. N. & R. Reed, of Newcastle-on-Tyne. Messrs. Oliver & Leeson are the architects. The style of architecture is Late Perpendicular, treated without elaboration; what little tracery there is will be confined to the two-light windows of the apsidal-ended sacristy. The building will be of red pressed bricks, with stone dressings, and slated roofs. Internally all the roofs will be boarded, the nave and transepts roofs being waggon-headed in shape, and that of the chancel circular. Accommodation will be provided for 500 persons. The contract is for 2,898*l*.

### SCHOOL BUILDINGS.

**Blaina.**—New schools have been opened at Blaina, Mon., for the Aberystwith School Board to accommodate 1,200 children; the buildings are all one storey, and the style is Gothic, with details of a simple character. The walls are built of hammer-dressed Cross Keys stone, lined internally with pressed Ebbw Vale bricks. The roofs are open-timbered, with overhanging eaves, and are boarded and slated. A board-room and residence for the clerk to the School Board is being erected adjoining the schools. The total cost will be about 9,000*l*. The builder is Mr. John Jenkins, of Brynmawr, and Messrs. Blessey & Aspinall, of Cardiff, the architects.

**Nantyglo.**—A mixed school is being erected at Nantyglo, for the same School Board, to accommodate 330 children at a cost of 3,300*l*. Mr. Edward Morgan, of Tredegar, is the builder, and Messrs. Blessey & Aspinall, of Cardiff, are the architects.

### ARCHÆOLOGY.

**St. Ninian's Cave.**—A description of the recent excavation of St. Ninian's Cave, Glasserton, Wigtownshire, was read at the meeting of the Society of Antiquaries of Scotland on Monday. Local tradition has long assigned to this cave the honour of having been the retreat chosen by St. Ninian for purposes of prayer and meditation. In 1871 it was visited by the late Dean Stanley, and an incised cross was discovered on the rock near the entrance. Last year some other crosses were discovered on detached stones, one of which was presented to the National Museum by Mr. Johnston Stewart, of Glasserton. The explorations now described were undertaken in June last for the Ayr and Wigtownshire Archæological Association, and resulted in the discovery of a number of indications of the use of the cave in bygone ages—first as a simple shelter, and latterly as a chapel and place of pilgrimage. It was found that a wall had been built across the mouth of the cave, the lower portion of which, with four steps of a stair leading down to the cave floor from the higher level outside, are yet remaining. On one of the stones forming the steps, three crosses within circles are carved. Other crosses were found carved on the rocky sides of the cave itself. On one of the flagstones of the floor, immediately beneath one of these crosses, there was found a rudely-cut inscription, of which the words "SANCT NI" alone were legible. Outside the wall there was found a stone basin, cut in a rounded boulder, the cavity 7 inches diameter and 5 inches deep, probably the holy-water stoup of the cave chapel. There was a considerable accumulation of remains of food, consisting principally of broken bones of the ox and sheep, and at various depths there were traces of fires. Immediately outside the wall, and under a large stone, at a depth of 6 feet, a human skeleton was found, doubled up and much decayed. Except the carved stones and rock sculpturings of crosses, nothing of importance was discovered in the form of manufactured relics; but the tradition connecting the cave with St. Ninian has received notable confirmation from the discoveries made.

### ART SCHOOLS.

**Brighton.**—Mr. P. R. Morris lately delivered a lecture and distributed the prizes at this school. In the course of it he said:—The study and influence of art endowed the student with what was nothing less than a sixth sense, as it trained the eye to the discovery of beauties of form and colour never discerned before, and unfolded to the vision the greater mysteries and beauties of nature. A country might possibly be great without art, as a man could be strong and powerful without art, but the latter was not much better than a "glorified navvy"; and any country which neglected to educate its people in art could never take a leading place amongst the nations. The enormous amount of money spent on French art fabrics was simply due to the fact that that nation organised Art Schools about a century before we did; but now the English had almost turned the tables upon them, and had a style of design which was accepted at home and abroad as English, as bearing the national character, and having a national sentiment, which he conceived all art should have. Having referred to the national taste in design as being the outcome of the æsthetic movement started by Mr. Ruskin and a few other enthusiasts five-and-twenty years ago, and of the great wealth of artistic home decoration which Japanese art had been the means of introducing into this country, the speaker proceeded to criticise "Brighton taste" with reference to the painting of the minarets and stone-work of the Royal Pavilion, the introduction of Chinese figures, and even camels, into the decoration of the banqueting-room of the same building, and the decorations of the balconies of the Grand Hotel, which now had the appearance of rust, work which, he said, they had taken a great deal of trouble to do, but which had better have been left alone. Knowledge in art would, however, remedy these defects in taste, and the art education which the country was now receiving would also stimulate the artist to put forth his very best effort, as they did not like their predecessors paint for a small educated circle, but for an educated public.

### GENERAL.

**Mr. Clark Stanton, the Sculptor,** was, on Tuesday, elected an Academician of the Royal Scottish Academy.

**Sir Edward Reed, K.C.B., M.P.,** has, at the personal request of the Prince of Wales, accepted a seat on the Jury Commission of the International Inventions Exhibition to be held at South Kensington.

**Bastien Lepage's "La Coquette"** was sold on Saturday at Messrs. Christie's for 246*l*. 15*s*. It was painted in 1882.

**The New Orleans Exhibition** has already resulted in a deficit of 319,422 dollars. Congress has been asked to vote a further subsidy.

**Tablets** are to be erected in the Memorial Aisle of Harrow Chapel in honour of the late Colonel Burnaby and Lord St. Vincent.

**A Society of Painters in Water-Colours** is about to be established in Switzerland, with M. Alfred Berthoud, of Neuchâtel, as president.

**The Ecclesiastical Commissioners** have given a site for the new Norwich Diocesan Training College for School-mistresses, the existing building having been condemned by the Education Department.

**Mr. Colin Minton Campbell,** the principal partner in the firm of Messrs. Minton, died on Saturday last, after a long illness. He was born in 1827. Mr. Campbell was one of the members for Staffordshire from 1874 to 1880.

**M. A. T. Monge,** one of the architects of the French Government, and a member of the Council General for Buildings, died in Paris on the 6th inst., in his sixty-third year. For a long period M. Monge had been mayor of Etretat.

**Mr. Sydney Colvin** was on Wednesday re-elected Slade Professor at Cambridge.

**The Colchester Board of Guardians** propose to improve the accommodation for vagrants at the Workhouse, under the direction of Mr. J. W. Start, architect, Colchester.

**Germany** has declined to take any official part in the International Exhibition at Antwerp.

**The Marquis of Bute** has given 50*l*. towards the erection of a Bath Hospital at Harrogate.

**The Plans** of Mr. John Lord, of Brighouse and Bradford, have been selected, in limited competition, for the proposed new Local Board offices at Brighouse.

**A Town-hall** is to be erected in Pesth. The site proposed is now occupied by the Karl Barracks on the Karl Boulevard.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, FEBRUARY 14, 1885.

## RESTRICTIONS TO THE USE OF PLANT.

FROM a decision which was given last week in the Court of Session, Edinburgh, it is plain that the novel use of a machine or any kind of plant involves a contractor in a liability which could not exist otherwise. In last March a contractor undertook to remove the rails used for waggons at a colliery belonging to the Marquis of Lothian. In order to shorten the operation of lifting the rails, he borrowed a crane from his lordship and mounted it on a bogie. It was an original and ingenious plan. The crane was not used up to its full strength, but in consequence of a flaw in the casting it broke, and, in falling, a man was killed. The widow brought an action, seeking 250*l.* compensation. The case was heard in the Sheriff Court, and judgment was given for the contractor, for it could not be proved that he was in fault. An appeal was heard in the Court of Session, and two out of three judges were in favour of reversing the judgment. The reason for the decision apparently was that to use a machine or tool for more than one purpose is "improper."

Lord Young in the course of his judgment spoke as follows:—It was ascertained that there was a flaw in the crane undiscoverable by inspection beforehand, and the Sheriff being of opinion, upon the evidence, that the strain which was put upon the crane at the time at which it broke did not exceed 24 cwt., while it was guaranteed to bear a strain of 30 cwt., was of opinion that the break was attributable to the latent flaw, for which the general user of any machine was not responsible, and that this relieved the defender of the liability which, his lordship supposed, the Sheriff thought would otherwise attach from the improper use—in short, that although there had been improper use, and the accident had happened, and damage had been done, it would be a sufficient answer of the man who otherwise would have been liable, that but for the latent flaw in the instrument so improperly used it would not have happened, and so the accident would not have happened, and therefore liability would not attach. His lordship was not prepared to assent to that proposition. But he did not think it necessary to decide that abstract question in the present case, for he was not of opinion with the Sheriff-Substitute that it was satisfactorily proved by the party defending the improper use, that but for the flaw the accident would not have occurred. The evidence with respect to the crane, and the propriety of using it for the work, was striking, and was all the one way. He assumed that the evidence was by a competent man, Mr. Robert Farstairs, a civil engineer, who was cited by the defenders, and who was instructed by the public authorities to inquire into the case, and was to the effect that the pulling up of rails was not a proper use to put a crane to, and that a crane lost in strength if it was not kept up. The defender put it to an improper use, and kept it at that use until it broke, and this was the only test which he applied of its suitability for the work. If the proposition

were sound at all that a latent defect would excuse a party from the consequence of the improper use of a thing in which a latent defect was found, his lordship thought the case must stand upon much clearer evidence than the calculation here, that the strain upon a machine improperly used was short of its guaranteed strength. He did not think that a man, even with a proper use, was entitled to put that crane, which he had never tested, to raise a weight up to the guaranteed strength. Upon the whole matter he was of opinion that the judgment here was erroneous. He quite approved of the decision which was referred to in a Queen's Bench case quoted, to the effect that a servant shall not have an action against his master who was using an ordinary machine. But the present case was one of unprecedented and improper use of a machine upon the only evidence, uncontradicted, in the case, and therefore it did not come within that class at all where an action was sought to be laid for an accident occurring in the ordinary course of business. He, therefore, thought the judgment of the Sheriff ought to be altered, and that they should find that the accident was attributable to the fault of the defender in having applied a crane to an improper purpose, and therefore he was liable in damages. Lord Craighill concurred.

Lord Rutherford Clark, on the contrary, took the other side, and his opinion will commend itself to practical men. His lordship said that it did not appear that the crane lost any of its original strength, and in point of fact the fall of the crane was entirely caused by a certain latent defect. Unless it had been proved that the strain exceeded the guaranteed strength of the crane, the impropriety of the use to which it was put did not appear to his mind so obvious. He took it that the men were working the crane very considerably within the limit of its strength, and that this accident would never have occurred at all but for the latent flaw. He was, therefore, of opinion that the defender was not making any improper use of the crane if he proved—and he thought it was proved—that there was no improper strain upon it so as to endanger life. But as two of the judges were in favour of the plaintiff, judgment was given accordingly with damages amounting to 100*l.*

## APPOINTMENTS VACANT.

HENDON.—Feb. 21.—Applications are required for the Appointment of a Surveyor. Mr. Samuel Tilley, Clerk to the Local Board, Hendon, N.W.

HONITON.—Feb. 18.—Applications are required for the Appointment of a Surveyor. Mr. G. T. Tweed, Town Clerk, Honiton.

NORTHAMPTON.—Feb. 21.—Applications are required for the Appointment of a Surveyor for the Trustees of the Church Charities. Mr. W. Terry, 4 Derngate, Northampton.

WILTON.—Feb. 19.—Applications are required for the Appointment of a Surveyor. Mr. G. M. Wilson, Clerk to the Wilton Rural Sanitary Authority, 12 Bridge Street, Salisbury.

## AUCTION SUMMARY.

For the Week ending Feb. 21.

(See Advertisements.)

TUESDAY, 17th:—

Messrs. Farebrother, Ellis, Clark & Co.—Freehold Building Estate, Lavender Hill and Wandsworth Common. Freehold Property, St. John's Hill, Wandsworth Road.

## COMPETITIONS OPEN.

BEVERLEY.—Plans are required for the Beverley Dispensary and Hospital, for Accommodation for Twelve Patients, with Residence for Medical Officer, &c., cost not to exceed £1,500. Mr. Brigham, Dispensary, Beverley.

CHELSEA.—Feb. 25.—Plans are invited for Additions to Vestry Hall. Premiums of 100*l.*, 50*l.*, and 30 guineas. Mr. J. Elsdell Salway, King's Road, Chelsea, Clerk to the Vestry.

CROYDON.—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100*l.*, 30*l.*, and 25*l.* for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

LONGTON.—Feb. 20.—The Longton School Board are about to erect two sets of schools at Normacott and Florence, each to accommodate 700 scholars (220 boys, 220 girls, and 260 infants), and invite architects in the Potteries and Newcastle to send in designs and estimates. Mr. Geo. C. Kent, Clerk to the School Board, Longton.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.

## CONTRACTS OPEN.

ABERDEEN.—Feb. 14.—For Building Retaining Walls, &c., to School. Messrs. Lawrence & Rosser, Architects, Newport, Mon.

BATLEY.—Feb. 18.—For Building Five Terrace Houses. Mr. W. Hanstock, Architect, Branch Road, Batley.

BATH.—Feb. 23.—For Supply of Glazed Stoneware Sewage Pipes and Gully Traps for twelve months. Mr. Alfred Mitchell, Engineer, Municipal Offices, Market Place, Bath.

BEDFORD.—Feb. 24.—For Plans and Specifications and Execution of Works in connection with Sewage Pumping at Outfall Works. Mr. J. Lund, Borough Surveyor, Corn Exchange, Bedford.

BELFAST.—Feb. 14.—For Additions to House. Mr. W. H. Lynn, Architect, Calendar Street, Belfast.

BELFAST.—For Building Semi-detached Villa. Mr. W. Batt, Garfield Street, Royal Avenue, Belfast.



**BERMONDSEY.**—Feb. 24.—For Formation of a Lake in Southwark Park. Mr. J. E. Wakefield, Metropolitan Board of Works Office, Spring Gardens, S.W.

**BINGLEY.**—Feb. 18.—For Additions to Cross-flats School. Mr. W. Bailey, Architect, 9 Market Street, Bradford.

**BIRKENHEAD.**—Feb. 18.—For Pulling-down and Rebuilding Brick and Stone Boundary Walling (340 yards) at Workhouse, Tranmere. Mr. T. C. Thorburn, Borough Surveyor, 35 Hamilton Square, Birkenhead.

**BIRMINGHAM.**—Feb. 18.—For Constructing the Soho, Handsworth, and Perry Barr Railways. The Engineer's Office, Euston Station.

**BLAENYWAUN.**—Feb. 28.—For Building Baptist Chapel. Mr. John Llewelyn, Brynllwelyn, St. Dogmel's, Cardigan.

**BOURNEMOUTH.**—Feb. 24.—For Alterations and Additions to No. 72 Commercial Road, for Coffee Tavern Company. Messrs. Lawson & Donkin, Architects, Trinity Chambers, Bournemouth.

**BRAMLEY.**—Feb. 18.—For Building Organ Factory. Mr. W. A. Hobson, Architect, 2 Park Place, Leeds.

**BRANSTY.**—Feb. 15.—For Alterations to No. 3 Lonsdale Street. Mr. J. S. Moffatt, Architect, Whitehaven.

**BUNDORAN.**—Feb. 25.—For Excavation of Channel in Rock (400 feet long), Construction of Boat Slip and Platform, Landing Quay (165 feet long), and Inclined Approach. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**BURNLEY.**—For Building Warehouses, Victoria Size Works. Mr. Thomas Bell, Architect, 14 Grimshawe Street, Burnley.

**CANTERBURY.**—Feb. 18.—For Enlarging Crown Post Office. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

**CARDIFF.**—Feb. 16.—For Building Printing Works and Offices, Westgate Street, for Messrs. D. Duncan & Sons. Messrs. James, Seward & Thomas, Architects, Cardiff.

**CARDIFF.**—Feb. 17.—For Construction of Wrought-iron Retort House and Coal Store. Roofs, Hydraulic and Foul Mains, Retort Fittings, Ascension Pipes, and Lime Shed Roof, also Annular Condensers with Syphons and Connections. Mr. H. Morley, Engineer, Gas Office, Cardiff.

**CARDIFF.**—Feb. 23.—For Forming and Sewering Street on the Craddock Wells Charity Estate, for the Governors. Messrs. Blessley & Aspinall, Surveyors, Guildhall Chambers, Cardiff.

**CASTLE BROMWICH.**—Feb. 16.—For Widening and Remaking Stetchford Lane (760 yards). Mr. W. S. Till, Borough Surveyor, Council House, Birmingham.

**CHORLEY.**—Feb. 17.—For Supply of Fourteen D-shaped Retorts, 15 feet by 13 feet and 9 feet 6 inches long. Mr. W. Blackledge, Gas Manager, Water Street, Chorley.

**DARLINGTON.**—Feb. 18.—For the Works in Building Central Passenger Station, including Platforms, Roofing, &c. Mr. William Bell, Architect to the North-Eastern Railway Company, York.

**DRIFIELD.**—Feb. 23.—For Building Engine and Boiler House, Chimney Shaft, &c. Mr. Josiah F. Fairbank, C.E., Westminster.

**DULWICH.**—Feb. 26.—For Building Infirmary for the Guardians of St. Saviour's Union. Messrs. Jarvis & Son, Architects, 29 Trinity Square, E.C.

**DUNDALK.**—Feb. 14.—For Supplying the Clogher Valley Tramway Company (Limited) with 3,000 tons of 45-lb. Steel Rails (ordinary flat-foot railway form), with Fishes and Washers, and 90,000 Baltic Sleepers, 6 feet by 8 inches, creosoted. Messrs. Barton, Company's Engineers, Exchange Buildings, Dundalk.

**EASTERN BENGAL.**—Feb. 17.—For Supplying Ironwork of Bridges and Girders for State Railway. Mr. Abercrombie Jopp, Director-General of Stores, India Office, S.W.

**ELGIN.**—Feb. 24.—For Erection of Academy Buildings, Gates, and Railings. Messrs. A. & W. Reid, Architects, Elgin.

**EDALE.**—For Building Church. Mr. William Dawes, Architect, 2 Cooper Street, Manchester.

**EDINBURGH.**—Feb. 18.—For Completion of Industrial Museum. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

**ELTON.**—Feb. 21.—For Building Stone Base, Pillars, Entrance Gates, &c., for proposed Recreation Ground. Mr. J. Cartwright, C.E., Borough Surveyor, Bury.

**FARNWORTH.**—Feb. 19.—For Construction of Bridge. Mr. W. Radford, 1 Princess Street, Manchester.

**FENTON.**—Feb. 18.—For Supplying and Erecting Sulphate of Ammonia Plant to Gasworks. Messrs. G. W. Stevenson & Son, C.E., 38 Parliament Street, Westminster, S.W.

**GREENWICH.**—Feb. 18.—For Smiths', Engineers', and Ironmongers' Work, Greenwich and Deptford. Mr. J. Spencer, Clerk to the District Board of Works, Greenwich.

**HANLEY.**—Feb. 18.—For Rebuilding Travellers' Rest and Borough Dining-rooms, Miles Bank. Mr. G. W. Bradford, Architect, Miles Bank Chambers, Hanley.

**HARWICH.**—Feb. 18.—For Foundations for Locomotive Shops. Plans at the Engineer's Office, Hunt's Bank, Manchester.

**HEMPSTED.**—Feb. 19.—For Works connected with St. Swithin's Church. Messrs. Waller, Son & Wood, Architects, 17 College Green, Gloucester.

**HOWDEN.**—Feb. 20.—For Construction of Glazed Socket Earthenware Tube Sewers, part in Concrete, Cast-iron Piping and Gulleys, Brick Sheds, Ventilators, Flushing-doors, &c. Mr. A. M. Fowler, C.E., 1 St. Peter's Square, Manchester.

**KINSALE HARBOUR.**—Feb. 17.—For Construction of a Pier at the Town Rock; Quay and Embankment from Cramer Street to Pier (1,740 feet); Embanked Approach Road from Main Street; and Construction of Boat Slips, Flights of Steps, Culverts, Fences, &c. The Superintendent, Harbour Works, Kinsale. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

# R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,  
INVENTOR and PATENTEE of the  
SAFETY WINDOW WITH REVERSIBLE SASHES

FOR

INEXPENSIVE & PERPETUAL CLEANLINESS

Which has gained at the INTERNATIONAL HEALTH and  
SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
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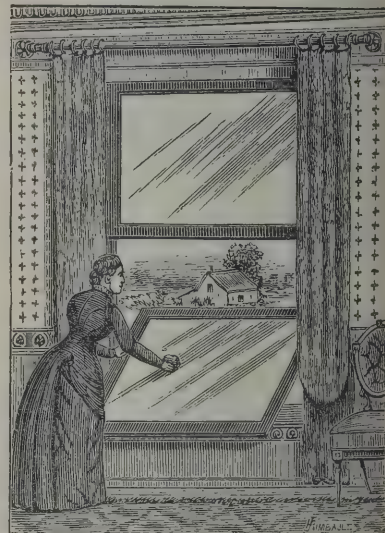
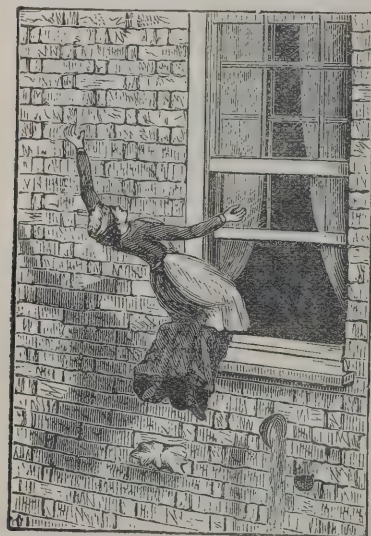
The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—

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| Barnstaple . . . . .   | Hancock, Pilton Street.                    |
| Belfast and 10 miles round . . . . .   | W. J. Watson, Royal Avenue, Belfast.       |
| Bournemouth and 10 miles round . . . . .   | H. W. Jenkins & Son, Builders.             |
| Brighton and 8 miles round . . . . .   | Cheesman & Co., Kensington Street.         |
| Bristol and 20 miles round, and Gloucestershire, Somerset, Dorset, Wilts, Mon., Glamorganshire . . . . . | Brock & Bruce, Albert Road, St. Phillip's. |
| Dublin and 20 miles round . . . . .  | J. & W. Beckett, 28 South King Street.     |
| Dundee and 30 miles round . . . . .  | Stewart Robertson, 34 Bank Street.         |
| Edinburgh . . . . .  | W. R. Commings, 45 Longbrook Street.       |
| Exeter and 20 miles round . . . . .  | Baird, Thompson & Co., 24 Bath Street.     |
| Glasgow and 30 miles round . . . . .   | The Sanitary and Economic Association.     |
| Gloucester and Cheltenham . . . . .  |  |

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| Hastings . . . . .                         | Taylor Bros., Builders.                                      |
| Hereford and 5 miles round . . . . .       | O. Lawrence, 41 Portland Street.                             |
| Ipscombe . . . . .                         | W. Jones, 4 Osborne Road.                                    |
| Leeds and 5 miles round . . . . .          | John Wm. Lewes, 65 Albion Street.                            |
| Liverpool . . . . .                        | Evan Griffiths & George Finning, Sefton Works, Miles Street. |
| Ludlow and Leominster . . . . .            | J. Grosvenor, Ludlow.  |
| Newton Abbott and 10 miles round . . . . . | Parker Bros., Courtney Street.                               |
| Nottingham and 15 miles round . . . . .    | Henry Vickers, Welford Road.                                 |
| Reading and 5 miles round . . . . .        |  |
| Southampton and 7 miles round . . . . .    | Driver & Co., St. Mary Saw Mills, Southampton.               |
| Sunderland and 10 miles round . . . . .    |  |
| Torquay and 5 miles round . . . . .        | C. & W. Watson, Union Street.                                |





**KENDAL.**—Feb. 28.—For Additions to Helme Lodge. Mr. John Thompson, Architect, Lowther Street, Kendal.

**LEICESTER.**—Feb. 26.—For Building Stables and Loose-boxes for Eighteen Horses, with Cart-sheds, Hay and Corn Stores. Mr. J. Gordon, C.E., Borough Surveyor, Town Hall, Leicester.

**LEICESTER.**—Feb. 25.—For Construction of Wrought-iron Girder Bridge across the River Soar, Braunstone Gate (300 tons Wrought-iron and 10 tons Cast-iron Parapet). Mr. J. Gordon, C.E., Borough Surveyor, Flood Works Office, Town Hall, Leicester.

**LEMINGTON.**—Feb. 21.—For Building Twenty-eight Houses. Mr. F. W. Rich, Architect, 5 Eldon Square, Newcastle-on-Tyne.

**LERWICK.**—Feb. 21.—For Building United Presbyterian Church. Mr. Alexander Mitchell, Union Bank, Lerwick.

**LISCANNOR.**—Feb. 25.—For Extension of the North Groin (60 feet), Deepening Harbour by Rock Excavation, Removal of Portion of Black Rock, Construction of Two Beacons, Boat Slip, and other works. Plan and Specification at the Office of Public Works, Dublin.

**LIVERPOOL.**—Feb. 20.—For Building Engine-house, Upper Frederick Street. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

**LONDON.**—Feb. 17.—For Supply of Steel Rails and Steel Angle Fish Plates. Mr. W. H. Andrews, Secretary, London Tramways Company, 80 Blackfriars Road, S.E.

**LONDON.**—March 24.—For Works and Repairs at Infirmary, Dartmouth Park Hill, N. Mr. H. H. Bridgman, Architect, 42 Poultry, E.C.

**LONG BUCKBY.**—Feb. 20.—For Works at Boat Inn. Messrs. John Ingman & Son, Architects, Hazelwood Road, Northampton.

**LONG EATON.**—Feb. 16.—For Building School-room, Class-room, Out-offices, &c. Mr. John Sheldon, Architect, Market Place, Long Eaton.

**LONGTON.**—Feb. 17.—For Constructing Tele-scopic Gasholder. Mr. J. M. Darwin, Engineer, Gasworks, Longton.

**MALDON.**—Feb. 18.—For Building Bakery, Stables, &c. Mr. W. Cobbold, Hall Road, Heybridge.

**MARSDEN.**—Feb. 18.—For Converting Building into Dwelling-house and Stable. Mr. E. Bower, Architect, Dirker, Marsden.

**MELTON.**—March 5.—For Additions and Alterations to the Suffolk County Lunatic Asylum. Messrs. Giles & Gough, Architects, 28 Craven Street, Charing Cross, London.

**MERELOUGH.**—Feb. 14.—For Extension of Chapel. Messrs. Waddington & Son, Architects, 5 Grimshawe Street, Burnley.

**MIDLAND RAILWAY.**—Feb. 19.—For Iron-work for Extending Bridge over Road, and for Extending Footbridge over Railway at Cudworth. Mr. A. A. Langley, Engineer's Office, Midland Railway, Derby.

**MORLEY.**—Feb. 18.—For Building Large Methodist Chapel. Mr. T. A. Buttery, Architect, Queen's Street, Morley.

**MUNGRISDALE.**—Feb. 17.—For Rebuilding Vicarage. Mr. George Watson, Architect, 3 St. Andrew's Place, Penrith.

**NELSON.**—Feb. 18.—For Gas-meter (40,000 feet per hour) and 16-inch Governor. Mr. W. Foster, Gasworks, Nelson.

**NORTHAMPTON.**—Feb. 23.—For Laying Cast-iron Socket Pipes (10 miles), &c. Messrs. Hawksley, C.E., 30 Great George Street, Westminster.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Construction of Works in connection with Widening Main Line from Manors Station to Heaton Junction (1 mile 40 chains). Plans and Specification to be seen by Feb. 2 next, at the Engineer-in-Chief's Office, Newcastle-on-Tyne.

**NORTH-EASTERN RAILWAY.**—Feb. 18.—For Building Passenger Station. Mr. Wm. Bell, Company's Architect, York.

**NOTTINGHAM.**—March 4.—For Building Law Courts and Offices on Site of Old Cattle Market. Messrs. Verity & Hunt, Architects, 27 Regent Street, S.W.

**NOTTING HILL.**—Feb. 17.—For Road Paving and Sewer Works. Mr. Wm. Weaver, C.E., Surveyor, Town Hall, Kensington High Street.

**OADBY.**—Feb. 14.—For Construction of Pipe Sewers, Manholes, Ventilators, Outfall Tanks, &c. Mr. E. L. Miles, Surveyor, Horsefair Street, Leicester.

**OLDHAM.**—For Alterations at Crown Mill and Reconstructing Roof and Fireproof Floors. Mr. J. Stott, Architect, 26 Clegg Street, Oldham.

**PONTYPRIDD.**—For Alterations to Chapel. Mr. T. Rowland, Architect, Old Post Office Chambers, Pontypridd.

**PORTO RICO.**—March 22.—For Supply of Dredging Apparatus. The Spanish Consulate-General, 21 Billiter Street, E.C.

**PRESTON.**—March 17.—For Dredging, Scouring, and Deepening Channel and Bed of River Ribble, from new Dock at Preston seaward, seven miles and a quarter. Mr. Edward Garlick, C.E., 33 Winckley Square, Preston.

**RIPPONDEN.**—Feb. 20.—For Building Shop and five Houses, Retaining Wall, and Forming Street. Mr. James Crawshaw, Architect, Wood Terrace, Ripponden.

**READING.**—Feb. 14.—For Enlarging Class-rooms and Making Glass Screens at Board Schools. Messrs. Morris & Stallwood, Architects, 17 Friar Street, Reading.

**ROCHDALE.**—Feb. 18.—For Construction of Three-lift Telescope Gasholders, &c. Mr. T. B. Ball, Manager, Gasworks, Rochdale.

**RYDE.**—Feb. 25.—For Supply of two Tramway Locomotive Engines, Tramway Carriage, and Luggage Van. Mr. Henry Roberts, Secretary, Ryde Pier, Ryde, Isle of Wight.

**SHOREHAM.**—Feb. 16.—For Building Chapel at Union Workhouse. Mr. W. F. Williams, Architect, 17 Middle Street, Brighton.

**SOUTHAMPTON.**—Feb. 23.—For Erection of Survey Department Building. Mr. A. B. Mitford, H.M. Office of Works, 12 Whitehall Place, S.W.

**SOUTH SHIELDS.**—Feb. 14.—For Laying Suction and Discharge Pipe for the Sea-water Bath Company. Mr. J. H. Morton, Architect, 50 King Street, South Shields.

**SOWERBY BRIDGE.**—Feb. 25.—For Building nine Houses at Beech. Mr. C. F. L. Horsfall, Architect, Lord Street Chambers, Halifax.

# RENDLE'S ACME GLAZING

Patentees:—**W. E. RENDLE & CO.,**  
3 WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON.

## SALES BY AUCTION.

**FOY, MORGAN & CO.** beg to announce that their Next PUBLIC AUCTION will take place on

WEDNESDAY, MARCH 4, 1885,

at the BALTIC SALE-ROOM, Threadneedle Street, E.C., when they will offer their usual assortment of DEALS, BATTENS, BOARDS, TIMBER, &c.

Catalogues will be issued in due time.

**FOY, MORGAN & CO.** {Wood Brokers, 108 Bishopsgate Street Within, E.C.

**Lewisham.**—Second Portion of the Priory Estate.—Pleasantly situated, with important frontages to Lewisham High Road and the new roads leading therefrom; close to Ladywell Station, and within a short omnibus ride of Lewisham Junction Station, whence frequent trains run to the City and West End.—Freehold Building Land and fine old Mansion, which could be easily subdivided into two or three residences; also a very valuable tavern plot and a splendid walled-in kitchen and fruit-garden, well stocked, and containing vineyard and forcing pits, &c. Easy payments. Free conveyances. Subsoil sand and gravel.

**MR. RICHARD J. COLLIER** having sold the whole of the first portion, will SELL by AUCTION, at the Plough Tavern, High Street, Lewisham, on Monday, February 23, at Six or Seven o'clock in the Evening, a further portion of this valuable estate, comprising about 50 lots of highly FREEHOLD BUILDING LAND, free of title and land tax, including several capital shop plots and a magnificent site for a tavern; also the fine old mansion known as The Priory, and a well-stocked kitchen and fruit garden, with vineyard, &c. Plans and particulars may be obtained of C. A. Russ, Esq., Solicitor, 62 King William Street, E.C.; of H. Davis, Esq., 2 Arthur Street East, London Bridge; at the place of sale; of the brewer on the estate; and of the Auctioneer, 28 Finsbury Avenue.

BEKHILL-ON-SEA.

between St. Leonards and Eastbourne, with Railway Station on the Estate.

**MESSRS. E. & H. LUMLEY** beg to announce that the extensive improvement works which have been carried on at a cost of about £20,000 are now complete, and invite the attention of builders, contractors, and capitalists to the valuable sea frontage now ripe for buildings. Leases will be granted on easy terms, and every facility afforded for developing this very promising seaside town.

Plans and particulars may be obtained of Lumleys, agents to the freeholder, the Right Hon. Earl DE LA WARR, at 22 St. James's Street, Piccadilly, S.W.

To Land Companies, Building Societies, Speculators, and others.—Lavender Hill and Wandsworth Common, S.W.—A highly important Freehold Building Estate (land tax redeemed), comprising nearly nine acres, occupying a most commanding position, extending from St. John's Road to Wandsworth Common, to which it has together over 1,000 feet of frontage. The property is situated only a short distance from Battersea Park and Clapham Common, adjoining St. Mark's Church, within two minutes' walk of Clapham Junction Station, giving exceptional facilities of access to the City and all parts of town, while good service of trams passes close to the estate at frequent intervals. The land, which slopes gently towards St. John's Road, is almost the only property in the neighbourhood yet uncovered, and is in the midst of a locality where houses of a moderate class are in constant demand. It is ripe for immediate building operations, and possesses unusual advantages for development, its position being such as to enable the whole estate to be most profitably dealt with. Possession on completion of purchase.

**MESSRS. FAREBROTHER, ELLIS, CLARK** & CO. have received instructions to offer the above valuable FREEHOLD ESTATE for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Tuesday, March 17, 1885, at Two o'clock precisely, in one Lot.

Particulars, plans, and conditions of sale may be obtained of Messrs. Maples, Teesdale & Co., Solicitors, 6 Frederick's Place, Old Jewry, E.C.; of Sharon Grote Turner, Esq., Solicitor, 56 Lincoln's Inn Fields, W.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

The adjoining Freehold Property, as set out in the following announcement will be sold at the same time and place.

**St. John's Hill, Wandsworth Road.**—A valuable Freehold Property, ripe for building development, with an extensive frontage to St. John's Hill. This important site covers rather more than an acre, and is admirably circumstanced. There is at present on the land a detached cottage residence, with stable and outbuildings, and possession will be given on completion of the purchase.

**MESSRS. FAREBROTHER, ELLIS, CLARK** & CO. will SELL this valuable ESTATE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Tuesday, March 17, 1885, at Two o'clock precisely, in one Lot. Particulars, plans, and conditions of sale may be obtained of Messrs. Maples, Teesdale & Co., Solicitors, No. 6 Frederick's Place, Old Jewry, E.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

**FULHAM, S.W.**—A valuable Freehold Building Estate, comprising altogether over 13 acres, with three detached residences thereon, occupying a commanding position in one of the main thoroughfares in this rising neighbourhood. It is situated only a short distance from Hammersmith Broadway and the new St. Paul's Schools, close to the proposed Hammersmith and Fulham recreation grounds, and almost adjoining the extensive cricket-ground in course of construction on the Baron's Court Estate, while it possesses unusual facilities of access, being within a few minutes' walk of five railway stations, and close to good omnibus routes. The land, which contains excellent gravel, and sand, possesses an extensive frontage to the Lillie Road, is ripe for immediate building operations, and forms one of the most important estates recently brought into the market in this locality. There are also two detached plots in Margravine Road, eminently suited for the erection of cottage property. Possession of the greater portion on completion of the purchase.

**MESSRS. FAREBROTHER, ELLIS, CLARK** & CO. have received instructions to offer the above important Estate for SALE by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Tuesday, March 17, 1885, at Two o'clock, in Two Lots. Particulars, plans, and conditions of sale may be obtained of Messrs. Few & Co., Solicitors, 19 Surrey Street Strand, W.C.; of Messrs. Simpson & Cullingford, Solicitors, 85 Gracechurch Street, E.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

VINE STREET, CLERKENWELL.

Freehold Building Site. With possession.

**MESSRS. FAREBROTHER, ELLIS, CLARK** & CO. will SELL by AUCTION, at the Mart, E.C., on Thursday, March 5, 1885, at Two o'clock, a valuable FREEHOLD BUILDING SITE, having an area of about 4,300 feet super., with a frontage of 119 feet to Vine Street, and abutting at the rear Strand, W.C.; of Messrs. Simpson & Cullingford, Solicitors, 85 Gracechurch Street, E.C.; at the Mart; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

Particulars may be had of A. W. Surtees, Esq., Solicitor, 35 Bedford Row, W.C.; at the Mart, E.C.; and of Messrs. Farebrother, Ellis, Clark & Co., 29 Fleet Street, Temple Bar, and 18 Old Broad Street, E.C.

[For remainder of Auctions, see page x.]



STOCKPORT.—March 20.—For Construction of Public Baths. Mr. A. M. Fowler, Borough Surveyor, St. Petersgate, Stockport.

STONE.—June 17.—For Improvement Works, Victor Street West. Mr. H. Fishwick, Clerk to the Local Board, Stone.

SYDNEY.—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

WALTHAMSTOW.—Feb. 24.—For Supply of Sanitary Glazed Pipes (second quality), &c. Mr. G. B. Jerram, Surveyor to the Local Board, Town Hall, Walthamstow.

WELLINGTON, HEREFORD.—March 2.—For Building Vicarage House and Offices. Mr. Thomas Nicholson, Architect, Hereford.

WELLINGTON, SOMERSET.—Feb. 21.—For Supply and Erection of Two Gas Engines and Gas-making Apparatus, Two Sets of Three-throw Pumps, with Girders, Pipes, Air Vessels, Gearing, Driving Bands, &c. Mr. Edward Pritchard, 2 Storey's Gate, Westminster, and 37 Waterloo Street, Birmingham.

WEST HARTLEPOOL.—For Building Theatre at Wingate. Mr. Brown, Central Hotel, West Hartlepool.

WHITEHAVEN.—Feb. 18.—For Rebuilding Three Houses. Mr. J. S. Moffatt, Architect, Whitehaven.

WISBECH.—Feb. 20.—For Laying Cast-iron Water Pipes and Works in Connection. Messrs. Easton & Co., C.E., 11 Delahay Street, Westminster.

WITTERSHAM.—March 3.—For Building Barn. Mr. James Standen, Acton House, Wittersham.

## TENDERS.

### BATH.

For Construction of Road and Sewer near Prior Park Road, Bath. Mr. T. B. SILCOCK, Surveyor, 14 Abbey Churchyard, Bath.  
Hancock . . . £333 10 0  
AMBROSE & SON (accepted) . . . 265 0 0

### BATH—continued.

For Alterations and Additions to a House at Weston, Bath.  
Birth . . . £580 0 0  
Hayward . . . 527 3 0  
Smith . . . 527 0 0  
Fry . . . 526 10 0  
Erwood . . . 516 0 0  
Francis . . . 512 0 0  
Morris . . . 466 0 0  
Frampton . . . 463 0 0  
Rodd & Bennett . . . 405 0 0

### BANGOR.

For Building Villa Residence, Upper Bangor, for Captain Hugh Savage. Mr. OWEN WILLIAMS, Architect.  
Humphreys, Bangor . . . £2,122 0 0  
Evan Williams, Bangor . . . 2,071 0 0  
R. & J. Williams, Bangor . . . 1,770 0 0  
Evans, Portdinorwig . . . 1,741 0 0  
PARRY & WILLIAMS, Bangor (accepted) . . . 1,735 0 0

### BIRSTALL.

For Building Houses and Shops, White Swan Estate, Birstall. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Branch Road, Batley. Quantities by the Architect.  
Willans, Birstall, mason . . . £351 0 0  
Wilkinson & Dawson, Bradford, joiner . . . 176 8 0  
B. & J. Leadbeater, Birstall, plasterer . . . 33 13 0  
Thornton, Heckmondwike, slater . . . 18 9 0  
Total . . . £579 10 0

### BOURNEMOUTH.

For Construction of Sewer in Poole Road, Bournemouth. Mr. G. R. ANDREWS, Surveyor.  
Hoare Bros., Bournemouth . . . £171 15 0  
Perkins & Co., Wareham . . . 128 16 0  
Sanders & White, Bournemouth . . . 126 6 8  
James, Bournemouth . . . 126 4 3  
STICKLAND, Bournemouth (accepted) . . . 108 12 6  
Surveyor's estimate . . . 128 0 0

### BRADING.

For Additions to Yarborough House, Brading, Isle of Wight, for Mr. James J. Darley. Mr. JAMES NEWMAN, Architect.  
Jacobs . . . £142 10 0  
Hayden . . . 133 10 0  
Cobenutt . . . 132 0 0  
Simonds . . . 86 13 0  
NEWMAN (accepted) . . . 80 0 0

### CREWE.

For Laying, Fixing, and Jointing Cast-iron Water Mains, &c., for the Water Supply. Crewe. Mr. J. A. DAVENPORT, C.E. 152 Hospital Street, Nantwich.  
Smith, Liverpool . . . £486 9 5  
Jackson, Neston . . . 440 19 0  
H. Hill, High Wycombe . . . 420 12 0  
Hill & Co., Cardiff . . . 399 0 0  
Bennett, Bromsgrove . . . 372 13 9  
Walsley & Co., Preston . . . 364 1 0  
Young, Skegness . . . 304 0 0  
Wood & Gresty, Wollaston . . . 300 0 0  
Dodd & Holt, Crewe . . . 287 18 3  
Drewitt, Alsager . . . 284 16 0  
Nunney, Crewe . . . 260 0 0  
SWINTON, Kinderton (accepted) . . . 239 10 0  
Harris, Shrewsbury . . . 235 0 0  
Wood, Wollaston . . . 232 10 0  
Jowett, Rainhill . . . 208 16 9

Iron Pipes, &c., per ton.

COCHRANE & Co. (accepted), £4 15s.

Valves.

GLENFIELD & Co., Kilmarnock (accepted).

### HYTHE.

For Cloak Rooms and Repairs to Board School, Hythe, Southampton, for the Fawley School Board. Mr. D. DAVY, Architect, Cadland, Southampton.  
Cotten, Hythe . . . £97 5 0  
German, Hythe . . . 90 0 0  
Rowland, Southampton . . . 89 15 0  
Tulling, Fawley . . . 78 10 0  
MARTELL, Hythe, Southampton (accepted) . . . 69 19 0

## ROOF COVERINGS.

A PAPER ON THIS SUBJECT WILL BE READ BY

**RALPH NEVILL, F.S.A., Fellow,**

At the Meeting of British Architects to be held on MONDAY, the 16th inst., at 8 P.M.

For full particulars see the JOURNAL of PROCEEDINGS issued on the 5th inst. to members and correspondents.

J. MACVICAR ANDERSON, Hon. Secretary.  
WILLIAM H. WHITE, Secretary.

Royal Institute of British Architects,  
9 Conduit Street, Hanover Square, London, W.

**ARCHITECTURAL ASSOCIATION,**  
9 CONDUIT STREET, W.

The Tenth Ordinary Meeting will be held on Friday evening next, the 20th inst., commencing at 7.30, when a paper will be read by HERBERT A. GRIBBLE, Esq., entitled "The Roman Renaissance."

W. H. ATKIN BERRY,  
HERBERT D. APPLETON, } Hon. Secs.

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The Steel Cut Nails are far superior in quality and more uniform in size than any wrought or hand-made Nails yet produced, and being lighter in weight than ordinary Iron Cut Nails and free from waste, they are found cheaper in actual use than common Iron Cut Nails at 1s. 6d. per cwt. less.

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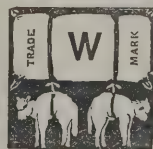
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## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it. Yours, &c.

"To Mr. Grundy." "JAMES WEIR, F.R.I.B.A.

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 80 Duncan Terrace, City Road, London.

Works—TYLDESLEY, near MANCHESTER.



**ILKLEY.**

For Additions to Craigland's Hydropathic Establishment, Ilkley, for Messrs. Dobson Bros. Mr. JAMES ATKINSON, Architect. Quantities by the Architect.

|  |          |
|--|----------|
| Dean, Ilkley, mason                        | £290 8 0 |
| Stephenson, Ilkley, joiner                 | 143 14 8 |
| Richardson, Ilkley, plasterer and concrete | 117 10 0 |
| Lawson, Brighouse, plumber                 | 44 15 0  |
| Nelson, Ilkley, slater                     | 41 10 0  |
| Gordon, Ilkley, painter                    | 7 17 6   |

**LANCASTER.**

For Conversion into Two Shops of the old Poor-Law Offices, Penny Street, Lancaster. Mr. J. PARKINSON, Architect.

|                   |            |
|-------------------|------------|
| Lancaster, mason  | } £730 0 0 |
| Milner, joiner    |            |
| Liver, plasterer  |            |
| Abbott, plumber   |            |
| All of Lancaster. |            |

For Conversion of Militia Officers' Mess-rooms, Lancaster, into Offices and Board-room for the Lancaster Guardians. Mr. J. PARKINSON, Architect.

|                           |            |
|---------------------------|------------|
| Lancaster, mason          | } £610 0 0 |
| Acton, joiner             |            |
| Hall, plasterer           |            |
| High, plumber             |            |
| Seward, heating apparatus |            |
| Stirzaker, painter        |            |
| All of Lancaster.         |            |

**LOCH LEVEN.**

For Supply and Erection of Concrete and Iron Pier at Onich Bay, Loch Leven. Mr. G. WOLFE BRENNAN, C.E., Engineer, Oban. Quantities by the Engineer.

|                         |            |
|-------------------------|------------|
| Moffat & Son, Paisley   | £1,910 8 9 |
| Thomson & Son, Gourrock | 1,824 8 9  |
| Bain, Fort Glasgow      | 1,717 16 4 |
| Cumming, Onich          | 1,650 0 0  |
| McLean, Fort William    | 1,640 0 0  |
| Fraser, Inverness       | 1,598 13 3 |
| Mackay, Inverness       | 1,522 6 1  |
| Engineer's estimate     | 1,534 2 6  |

**LONDON.**

For Reconstructing the Main Sewer in Queen's Road and Great Cambridge Street, Shore-ditch.

|                            |             |
|----------------------------|-------------|
| Roberts                    | £32,850 0 0 |
| Beadle Bros.               | 27,788 0 0  |
| Prowse & Lee               | 27,620 0 0  |
| Cooke & Co.                | 27,000 0 0  |
| Hill                       | 26,999 0 0  |
| Dunmore                    | 26,992 0 0  |
| Botterill                  | 24,996 0 0  |
| Walker                     | 24,264 0 0  |
| Pizzie & Co.               | 24,200 0 0  |
| McCrae & McFarland         | 24,000 0 0  |
| Adams                      | 23,883 0 0  |
| Rigby                      | 23,700 0 0  |
| Webster                    | 23,530 0 0  |
| Williams & Wallington      | 23,500 0 0  |
| Killingback                | 20,926 0 0  |
| Mowlem & Co.               | 19,925 0 0  |
| NOWELL & ROBSON (accepted) | 19,850 0 0  |
| Bottom Bros.               | 18,560 0 0  |

For Building Additional Stables in rear of present Stables, Hurlingham Lane, Fulham, for the General Omnibus Company, Limited. Quantities by Mr. A. J. Bolton, 55 Lincoln's Inn Fields.

|                                |            |
|--------------------------------|------------|
| Colliver                       | £1,655 0 0 |
| Howell & Sons                  | 1,470 0 0  |
| Dearing & Sons                 | 1,460 0 0  |
| Parker                         | 1,449 0 0  |
| Knight                         | 1,428 14 0 |
| Bolding                        | 1,427 0 0  |
| Jackson & Todd                 | 1,414 0 0  |
| Haynes                         | 1,375 0 0  |
| Aldridge & Jenvey              | 1,368 0 0  |
| Garrud                         | 1,364 15 0 |
| Hunt                           | 1,340 0 0  |
| Evans                          | 1,335 0 0  |
| Richins & Mount                | 1,274 0 0  |
| SCHARIEN & WILLIAMS (accepted) | 1,212 0 0  |

For Supplying and Fixing Heating, Ventilating, and Hot-water Supply Apparatuses, at St. John's New Infirmary, Hampstead. BACON & CO., London (accepted).

**LONDON—continued.**

For Enlargement of Board School, Salter's Hill. Mr. E. R. ROBSON, Architect.

|                     |            |
|---------------------|------------|
| Palmer & Sons       | £5,369 0 0 |
| Turtle & Appleton   | 5,222 0 0  |
| Scharien & Williams | 4,871 0 0  |
| F. & F. J. Wood     | 4,844 0 0  |
| Lathey Bros.        | 4,760 0 0  |
| Downs               | 4,747 0 0  |
| Scrivener & Co.     | 4,747 0 0  |
| Pritchard           | 4,738 0 0  |
| W. & F. Croaker     | 4,729 0 0  |
| Wall Bros.          | 4,720 0 0  |
| Atherton & Latta    | 4,719 0 0  |
| Cox                 | 4,700 0 0  |
| Oldrey              | 4,700 0 0  |
| Holloway            | 4,685 0 0  |
| Jerrard             | 4,683 0 0  |
| Holloway Bros.      | 4,579 0 0  |
| Kirk & Randall      | 4,476 0 0  |
| Kearney             | 4,475 0 0  |
| Stimpson & Co.      | 4,456 0 0  |
| Smith & Sons        | 4,433 0 0  |
| Howell & Son        | 4,368 0 0  |

For Enlargement of Board School, Mantua Street. JOHNSON (per contract schedule) £610 0 0

For Additional Cloak-room to Board School, Shap Street.

|                  |          |
|------------------|----------|
| Pritchard        | £155 0 0 |
| McCormick & Sons | 137 0 0  |
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For Covered Playground to Board School, South Lambeth Road.

|                |          |
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| Riley Bros.    | £253 0 0 |
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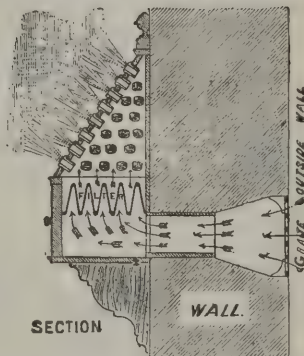
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The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



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**CHURCH WALL VENTILATOR.**—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The **DEAN OF YORK**, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

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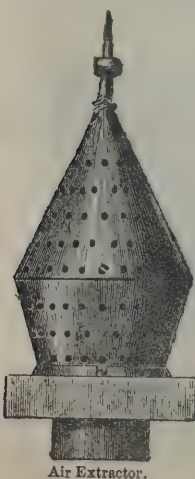
**CHURCH WINDOW VENTILATOR.**—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.

"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

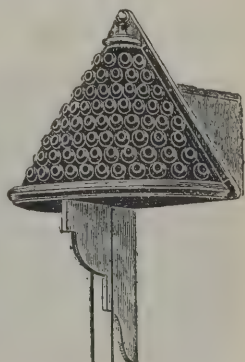
These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.

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Estimates and further information given on application to the "HARDING" VENTILATING CO., 30 East Parade, Leeds.



Air Extractor.





## LONDON—continued.

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| Cote . . . . .   | £318 | 0 0  |
| Constable . . . . .                                      | 310  | 12 4 |
| Mowlem & Co. . . . .                                     | 305  | 0 0  |
| Aldridge . . . . .                                       | 298  | 0 0  |
| Smart . . . . .  | 293  | 1 8  |
| Wimpey & Co. . . . .                                     | 288  | 0 0  |
| Treherne . . . . .                                       | 270  | 0 0  |
| Farthing & Co. . . . .                                   | 260  | 15 2 |
| RUTTY (accepted) . . . . .                               | 249  | 0 0  |
| Nowell & Robson . . . . .                                | 247  | 0 0  |

## For the Erection of Iron Railings round Chiswick Common.

|                           |      |       |
|---------------------------|------|-------|
| Butler & Co. . . . .      | £485 | 0 0   |
| Jones & Co. . . . .       | 427  | 11 10 |
| Baylis & Co. . . . .      | 421  | 18 0  |
| Stone . . . . .           | 395  | 18 0  |
| Hadley & Co. . . . .      | 380  | 18 0  |
| Pearson . . . . .         | 373  | 7 6   |
| Dawson . . . . .          | 364  | 12 2  |
| Hill & Co. . . . .        | 360  | 3 0   |
| Reynolds & Co. . . . .    | 345  | 18 0  |
| Witman . . . . .          | 337  | 0 0   |
| Simpson & Co. . . . .     | 322  | 19 6  |
| Simpson & Wood . . . . .  | 322  | 19 6  |
| Solam & Co. . . . .       | 319  | 0 0   |
| Keny . . . . .            | 312  | 9 10  |
| Bird & Co. . . . .        | 309  | 0 0   |
| Williams & Co. . . . .    | 308  | 0 0   |
| Pocock . . . . .          | 307  | 10 0  |
| Faulkner & Sons . . . . . | 302  | 11 9  |
| Badham . . . . .          | 296  | 15 6  |
| Johnson & Co. . . . .     | 286  | 0 0   |
| Rowland & Sons . . . . .  | 278  | 0 0   |
| Hydes & Co. . . . .       | 274  | 7 9   |
| Williams . . . . .        | 255  | 15 6  |

For Repairs to the Barracks of the City of London Militia, Finsbury, and for Erection of an Hospital Store for Her Majesty's Lieutenants of the City of London. Mr. ALEXANDER PEEBLES, F.R.I.B.A., F.S.I., Architect.

McCORMICK & SONS (accepted).

## LONDON—continued.

For Alterations and Additions to Baths, for the Bermondsey Commissioners of Baths and Washhouses. Messrs. G. ELKINGTON & SON, Architects, 95 Cannon Street, E.C.

|                                  |        |      |
|----------------------------------|--------|------|
| Bradford & Co. . . . .           | £3,162 | 0 0  |
| Cockburn & Co. . . . .           | 2,937  | 0 0  |
| Thomas & Taylor . . . . .        | 2,441  | 0 0  |
| Pratt & Co. . . . .              | 2,267  | 0 0  |
| Badham & Co. . . . .             | 2,260  | 0 0  |
| Seaton . . . . .                 | 2,112  | 14 0 |
| T. & J. Hosking . . . . .        | 2,002  | 0 0  |
| Knight . . . . .                 | 1,917  | 0 0  |
| Richmond & Co. . . . .           | 1,850  | 0 0  |
| Thompson . . . . .               | 1,785  | 0 0  |
| J. & F. MAY (accepted) . . . . . | 1,716  | 17 0 |

Deduction for Cast-iron Backs instead of Porcelain.

|                                  |      |     |
|----------------------------------|------|-----|
| Cockburn & Co. . . . .           | £225 | 0 0 |
| Pratt & Co. . . . .              | 200  | 0 0 |
| J. & F. MAY (accepted) . . . . . | 174  | 0 0 |
| Bradford & Co. . . . .           | 170  | 0 0 |
| Thompson . . . . .               | 160  | 0 0 |
| Badham & Co. . . . .             | 155  | 0 0 |
| Seaton . . . . .                 | 150  | 0 0 |
| T. & J. Hosking . . . . .        | 132  | 0 0 |
| Knight . . . . .                 | 127  | 0 0 |
| Thomas & Taylor . . . . .        | 41   | 0 0 |

For Erection of Male Lunatic Wards at the Workhouse, Poland Street, Oxford Street, W., for the Guardians of the Westminster Union. Messrs. H. SAXON SNELL & SON, Architects, 22 Southampton Buildings, W.C.

|                             |        |     |
|-----------------------------|--------|-----|
| Johnson & Manners . . . . . | £1,385 | 0 0 |
| Bamford . . . . .           | 1,295  | 0 0 |
| Tozer . . . . .             | 1,272  | 0 0 |
| Gentry . . . . .            | 1,250  | 0 0 |
| Howard . . . . .            | 1,247  | 0 0 |
| Hack . . . . .              | 1,240  | 0 0 |
| H. & E. Lea . . . . .       | 1,200  | 0 0 |
| Cock . . . . .              | 1,185  | 0 0 |
| Wall Bros. . . . .          | 1,150  | 0 0 |
| Lyford . . . . .            | 1,147  | 0 0 |
| Holt . . . . .              | 1,100  | 0 0 |
| Howell & Sons . . . . .     | 1,100  | 0 0 |
| Mowlem & Co. . . . .        | 1,091  | 0 0 |

## LONDON—continued.

For Nave and Temporary Chancel for St. Benet's and All Saints' Church, Kentish Town, for the Rev. F. Rowland and others. Mr. JOSEPH PEACOCK, Architect.

|                                 |        |     |
|---------------------------------|--------|-----|
| Grover & Son . . . . .          | £7,483 | 0 0 |
| Adamson & Son . . . . .         | 7,050  | 0 0 |
| Patman & Fotheringham . . . . . | 6,973  | 0 0 |
| Nightingale . . . . .           | 6,849  | 0 0 |
| Dove Bros. . . . .              | 6,854  | 0 0 |
| Downs . . . . .                 | 6,692  | 0 0 |
| Manley & Co. . . . .            | 6,490  | 0 0 |
| Kilby & Gayford . . . . .       | 6,220  | 0 0 |

## MAIDSTONE.

For Alterations and Additions to Maidstone Heath Schools. Mr. HUBERT BENSTED, Architect, Maidstone.

|   |      |      |
|---|------|------|
| Gray, Maidstone . . . . .                         | £639 | 10 0 |
| Award, Maidstone . . . . .                        | 634  | 0 0  |
| Elmore, Maidstone . . . . .                       | 595  | 0 0  |
| Froud, Maidstone . . . . .                        | 576  | 0 0  |
| Wilkins, Loose . . . . .                          | 547  | 0 0  |
| WALLIS & CLEMENTS, Maidstone (accepted) . . . . . | 523  | 0 0  |

## NORTHAMPTON.

For Building Stables, Houghton Road, for the Northampton Corporation.

|                                     |      |      |
|-------------------------------------|------|------|
| Tew . . . . .                       | £349 | 7 0  |
| Sharman Bros. . . . .               | 345  | 0 0  |
| Martin . . . . .                    | 329  | 0 0  |
| Branson & Son . . . . .             | 323  | 0 0  |
| Clayson & Sharman . . . . .         | 313  | 0 0  |
| Dunckley . . . . .                  | 298  | 10 0 |
| White . . . . .                     | 290  | 0 0  |
| Heap . . . . .                      | 290  | 0 0  |
| WOODFORD & SON (accepted) . . . . . | 284  | 0 0  |

## STRETTFORD.

For Sewage Distributors, &c., at the Stretford Sewage Farm. Mr. H. ROYLE, Surveyor.

|                              |      |      |
|------------------------------|------|------|
| Noblett & Cantrell . . . . . | £702 | 1 3  |
| Fawkes Bros. . . . .         | 682  | 6 10 |
| Worthington . . . . .        | 587  | 16 4 |
| Clarke . . . . .             | 553  | 19 2 |
| Hunter & Booth . . . . .     | 551  | 9    |
| NAYLOR (accepted) . . . . .  | 487  | 16 8 |

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|   |        |      |
|---|--------|------|
| For Sewerage Works. Mr. T. Reid, Engineer, Normanton. |        |      |
| Nettleton, Stanley . . .                              | £9,000 | 0 0  |
| Lomax, Eccles . . .                                   | 4,319  | 11 2 |
| Mather, Hull . . .                                    | 4,145  | 0 7  |
| Smith, Newcastle-on-Tyne . . .                        | 3,957  | 13 1 |
| Hill & Co., Cardiff . . .                             | 3,908  | 0 0  |
| Holmes, Alfreton . . .                                | 3,700  | 0 0  |
| Tattersall, Wakefield . . .                           | 3,689  | 5 7  |
| Tempest, Keighley . . .                               | 3,661  | 4 10 |
| Illingworth, Staincliffe . . .                        | 3,569  | 13 2 |
| Garforth Bros., Mirfield . . .                        | 3,557  | 0 3  |
| Graham, Huddersfield . . .                            | 3,311  | 16 0 |
| Small & Sons, West Bromwich . . .                     | 3,248  | 9 0  |
| Dawson, Bury . . .                                    | 3,228  | 0 0  |
| Brayshaw, Rothwell . . .                              | 3,179  | 11 8 |
| Bateman, Wyke . . .                                   | 3,150  | 0 0  |
| Keegan, Wakefield . . .                               | 3,099  | 14 5 |
| Aliffe, Ossett . . .                                  | 3,098  | 4 7  |
| Rhodes, Aston . . .                                   | 3,078  | 0 0  |
| Gilyeat, Leeds . . .                                  | 3,021  | 5 7  |
| Hall, Bradford . . .                                  | 2,920  | 15 7 |
| Young, Skegness . . .                                 | 2,887  | 8 6  |
| MARVELL & PAYER, Leeds (accepted) . . .               | 2,852  | 3 11 |
| Carter, Bradford Moor . . .                           | 2,514  | 13 6 |

**SANDOWN.**

|  |        |      |
|--|--------|------|
| For Erection of a Parish-room, Christ Church, Sandown, Isle of Wight. Mr. JAMES NEWMAN, Architect, Sandown. Quantities supplied. |        |      |
| Young . . .  | £1,072 | 0 0  |
| Jolliffe . . .   | 948    | 0 0  |
| Hayden . . .   | 945    | 10 0 |
| COBENUTT (accepted) . . .  | 920    | 0 0  |

**TODMORDEN.**

|  |      |      |
|--|------|------|
| For Erection of Stables and Coachhouses, Oxford Street, Todmorden, for Mr. Halstead Pickles. Mr. J. R. BLACKA, Architect. Quantities by the Architect. |      |      |
| Lumb, mason and bricklayer . . .   | £170 | 0 0  |
| Barker, joiner . . .   | 68   | 0 0  |
| Davis, plumber . . .   | 5    | 18 6 |
| Black, plasterer . . .   | 9    | 17 6 |

**SOUTHAMPTON.**

|   |  |  |
|---|--|--|
| For Building Club Premises for the Southampton Royal Yacht Club. Mr. W. H. MITCHELL, Architect. |  |  |
| CROOK (accepted).   |  |  |
| For full list of tenders see <i>Architect</i> , Jan. 17.  |  |  |

**SOUTHPORT.**

|   |        |      |
|---|--------|------|
| For Cast-iron Pipes for the Lord Street Storm Outlet at Coronation Walk, Southport. 21-inch Bore. |        |      |
| Smith, Newcastle . . .  | £1,548 | 0 0  |
| Laidlaw & Sons, Glasgow . . .   | 1,499  | 10 6 |
| Pendleton & Co., Liverpool . . .  | 1,481  | 0 0  |
| M'Farlane, Strang & Co., Glasgow . . .  | 1,453  | 10 0 |
| Eddington & Son, Glasgow . . .  | 1,336  | 0 0  |
| Tees Side Iron Co., Middlesbrough . . .   | 1,312  | 3 9  |
| Cochrane & Co., Dudley . . .  | 1,294  | 11 3 |
| Maclaren & Co., Glasgow . . .   | 1,289  | 11 3 |
| Butterley Iron Co., Alfreton . . .  | 1,288  | 0 0  |
| Mallett & Co. . .   | 1,280  | 0 0  |
| Cochrane, Grove & Co., Middlesbrough . . .  | 1,272  | 0 0  |
| Clay Cross Iron Co., Chesterfield . . .   | 1,270  | 0 0  |
| Stewart & Co., Glasgow . . .  | 1,242  | 18 5 |
| Stanton Ironworks, Nottingham . . .   | 1,228  | 0 0  |
| J. & S. Roberts, Bromwich . . .   | 1,220  | 0 0  |
| Jukes, Coulson, Stokes & Co. . .  | 1,195  | 0 0  |
| Sharples, Accrington . . .  | 1,175  | 0 0  |

**18-inch Bore.**

|                                  |        |      |
|----------------------------------|--------|------|
| Smith . . .                      | £1,354 | 0 0  |
| Pendleton & Co. . .              | 1,296  | 0 0  |
| M'Farlane, Strang & Co. . .      | 1,271  | 16 3 |
| Tees Side Iron Co. . .           | 1,170  | 17 6 |
| Eddington & Son . . .            | 1,165  | 0 0  |
| Cochrane & Co. . .               | 1,137  | 15 9 |
| Butterley Iron Co. . .           | 1,127  | 0 0  |
| Mallett & Co. . .                | 1,113  | 10 0 |
| Cochrane, Grove & Co. . .        | 1,113  | 0 0  |
| Clay Cross Iron Co. . .          | 1,110  | 0 0  |
| Stewart & Co. . .                | 1,098  | 16 6 |
| Laidlaw & Sons . . .             | 1,098  | 16 3 |
| Stanton Ironworks . . .          | 1,074  | 13 0 |
| Maclaren & Co. . .               | 1,072  | 0 4  |
| J. & S. Roberts . . .            | 1,062  | 0 0  |
| Jukes, Coulson, Stokes & Co. . . | 1,045  | 0 0  |
| Sharples . . .                   | 1,032  | 0 0  |

**WATERLOO.**

|   |      |      |
|---|------|------|
| For Making-up Hereford Road, for the Waterloo-with-Seaforth Local Board. Mr. R. THOMPSON, Surveyor. |      |      |
| Nuttall, Bootle . . .   | £325 | 12 6 |
| Naughan, Cheetham . . .   | 244  | 10 0 |
| Chadwick, Liverpool . . .   | 233  | 10 0 |
| Marr, Liverpool . . .   | 227  | 13 1 |
| M'Cabe & Co., Liverpool . . .   | 220  | 0 0  |
| Cattersall & Co., Liverpool . . .   | 207  | 16 6 |
| KEATING & SONS, Liverpool (accepted) . . .  | 196  | 16 3 |
| Armstrong, Bootle . . .   | 178  | 17 0 |
| Surveyor's estimate . . .   | 206  | 0 0  |

**WATFORD.**

|   |        |      |
|---|--------|------|
| For Alterations and Additions to Girls' and Infant Schools, Red Lion Yard, Watford, for the Watford School Board. Mr. W. H. SYME, A.R.I.B.A., Architect, 52 High Street, Watford. |        |      |
| Turner . . .  | £1,520 | 8 0  |
| Longman . . .   | 1,474  | 0 0  |
| Waterman . . .  | 1,390  | 5 0  |
| Chadwick . . .  | 1,318  | 0 0  |
| JUDGE & EAMES (accepted) . . .  | 1,297  | 10 0 |
| Neal (withdrawn) . . .  | 1,137  | 0 0  |

**WELLINGTON.**

|  |        |     |
|--|--------|-----|
| For Cast-iron Pipes and Special Castings for the Wellington Waterworks. Mr. E. PRITCHARD, C.E., Engineer, London and Birmingham. |        |     |
| Romans & Sons, Edinburgh . . .   | £1,410 | 7 0 |
| Willey & Co., Exeter . . .   | 1,388  | 2 7 |
| Macfarlane, Strang & Co., E.C. . .   | 1,340  | 8 8 |
| Butterfly & Co., E.C. . .  | 1,232  | 0 0 |
| Cochrane & Co., Dudley . . .   | 1,223  | 0 0 |
| Bishop Bros., Wellington . . .   | 1,215  | 0 0 |
| Cochrane, Grove & Co., Middlesbrough . . .   | 1,200  | 0 0 |
| Jordan & Sons, Newport . . .   | 1,172  | 0 0 |
| Firmstone Bros., Stourbridge . . .   | 1,159  | 0 0 |
| Spittle, Limited, Newport . . .  | 1,156  | 0 0 |
| J. & S. ROBERTS, West Bromwich (accepted) . . .  | 1,128  | 4 0 |

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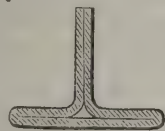
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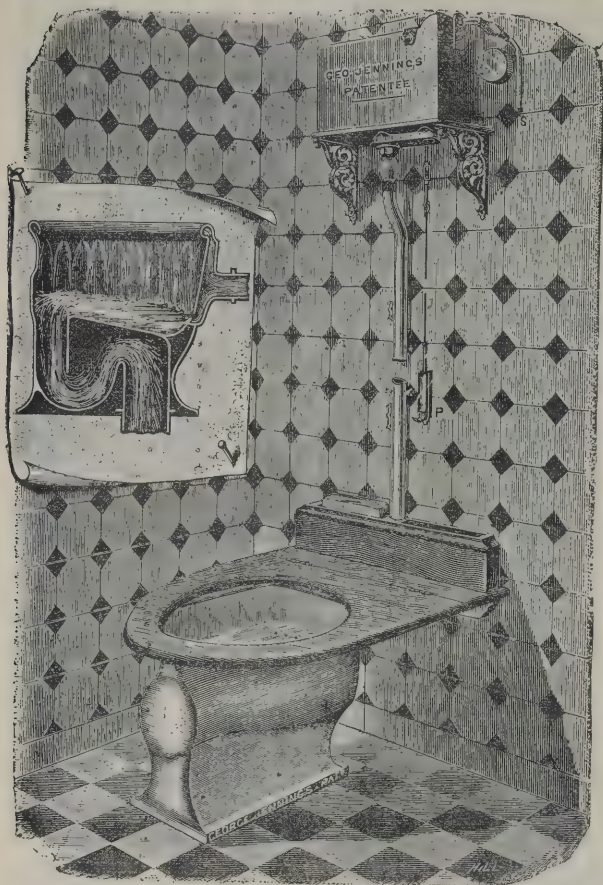
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The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

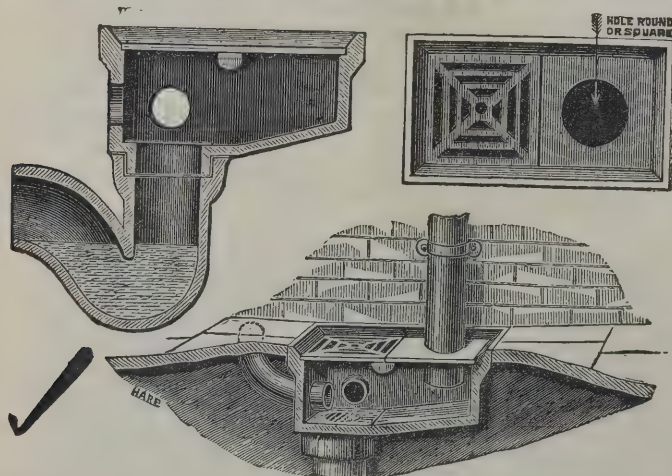
At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII, and successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with **"JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN"** 5 feet over, with  $1\frac{1}{2}$  inch down pipe, ten apples (averaging  $1\frac{1}{2}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

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Saturday, February 14, 1885.



# The Architect.

## THE WEEK.

IT is satisfactory to know that the 20th Middlesex have been among the earliest, if not the first, of the volunteer corps who have offered their services to the Government for garrison duty in the metropolis at the present crisis. Under the command of Lieutenant-Colonel EDIS the regiment is in a most efficient state, and there is no doubt that if the authorities wish to take advantage of the offer, the duties will be performed with soldierly precision.

MR. HODDER M. WESTROPP, whose death has been announced, was an industrious writer of useful books on archæology, in which an effort was made to popularise the subject for the sake of people who take up a study on the run-and-read principle. He lectured on Greek art of all periods, Roman Temples, Ancient Painting, the Catacombs, &c. Having lived in Rome, he was engaged to deliver three lectures in the Royal Institution on the recent discoveries in that city. He compiled books on "Precious Stones and Antique Gems," "Painted Vases," "Pottery and Porcelain," "Imperial Rome," "Homeric Doubts," but we understand that his most successful work was "The Handbook of Archæology."

LORD BRABAZON points out a danger which seems to await the Water Gate, by INIGO JONES, in the garden at the end of Buckingham Street. It is apparently so much neglected by the Metropolitan Board of Works and the Office of Works, that we are not surprised a railway company should schedule it. The proposed railway between Euston Station and Charing Cross is to be carried for the greater portion of its length in the line of the proposed new street from Trafalgar Square to Oxford Street. In connection with the railway a short street is contemplated, from St. Martin's Place to the Victoria Embankment, terminating at the Metropolitan District Railway station at Charing Cross. The centre line of this street passes York Gate at a distance of about 30 feet to the northward. It does not follow, however, that a line so placed would involve the destruction of the gate, and if it had to be taken down it would be re-erected. The use of the Water Gate is no longer apparent since the Embankment was constructed, and it does not even indicate the former level of the Thames. As it has ceased to be a record, it would be an advantage to have the whole of the structure visible, and as the authorities will not restore the gate, why should not the railway company make us their debtors?

THE Peabody Trustees, in their annual report, say that within the past year they have expended on land and buildings 80,903*l.* 10*s.* 11*d.*, making the total expenditure 1,170,787*l.* 3*s.* 5*d.* During the year the trustees opened eleven blocks of buildings at Pear Tree Court, Clerkenwell, containing 514 rooms, all of which are now occupied. Eight blocks at Little Coram Street, containing 450 rooms, were completed in December last, and are now being let. Five blocks at Islington are in a forward state, and will be opened before midsummer, and five blocks to be erected partly on the Old Pye Street site and partly on the Great Peter Street (Westminster) site will, it is hoped, be ready for occupation by the end of the present year. When these buildings are completed, the trustees will have spent the whole of their capital, and will be unable to erect any more buildings until the loan from the Public Works Loan Commissioners is paid off. Up to the end of the year the trustees had provided for the artisan and labouring poor of London 10,144 rooms, besides bath-rooms, laundries, and washhouses, occupied by 18,453 persons.

THE Archbishop of CANTERBURY has undertaken the difficult office of arbitrator in the dispute over the restoration of Peterborough Cathedral. Reverence for His Grace's position may induce the Dean and Chapter and Restoration Committee to accept the Archbishop's decision. But it is not a question of theology that is involved, and, with all respect,

it must be said that His Grace's utterances on art are not evidence of a toilsome study of the subject. In a remarkable address which was delivered in Birmingham, the Archbishop was supposed to have referred to the *Venus of Melos* as if it were the work of a famous sculptor of that name, thus imitating the example of a London daily newspaper. The cathedral authorities and a committee have a most careful architect: would it not be wiser to trust to Mr. PEARSON'S impartiality?

IN an address which was given on Tuesday in Edinburgh, Mr. COCHRAN-PATRICK, M.P., explained the need of an official survey of historical monuments in Scotland, by which they would become national property. In 1807 the Danish Government adopted the plan of taking over some isolated monuments. But it was found from experience that a larger control was necessary, and in 1873 it was decided to try the experiment of dividing the country into districts, and to send to each district a qualified artist and competent archæologist to place on paper, with absolute fidelity, everything of archæological and historical interest in the country. In Scotland a few of the local societies are about to begin surveys of the kind, and to prepare drawings of all the remains which can be considered of importance. The example is deserving of imitation in England. It is forgotten, apparently, that about fifty years ago the Government did commence an archæological survey in Ireland. Preparations were made for conducting the work on a scientific basis, and the late Dr. PETRIE, who was one of the most cautious archæologists, was appointed director. But owing to influential opposition the work was summarily stopped, and the only products of it to which the public have access are a small volume and an essay. It is understood that a large amount of information exists in manuscript which is never likely to be printed. The expense may frighten the Treasury; but another objection may arise from the difficulty of deciding what archæological theory merits preference and official sanction.

THE extension of the District Railway between the Mansion House and Tower Hill stations was described by the engineer, Mr. WOLFE BARRY, at the Institution of Civil Engineers on Tuesday. It is remarkable that the works cost 20,000*l.* less than the Parliamentary estimate, and the cost of the land was less than was expected. The Parliamentary estimate was, for the railway and land, 2,365,261*l.*; for street widenings and a new street, 929,412*l.* After lengthy negotiations, it was agreed that the Metropolitan Board of Works should contribute 500,000*l.* and the Commissioners of City Sewers 300,000*l.* towards the undertaking. The works were commenced in August 1882, and were completed and opened for traffic (together with the Whitechapel extension) in October 1884.

THE pleasure which good people take in maligning architects was once more exhibited during the hearing of a case before Mr. Justice SMITH on Wednesday. A firm of builders undertook the contract for a section of a church in Devonshire according to plans by Mr. ALFRED NORMAN. Although the contract amount was only 1,645*l.*, a balance of 522*l.* was left unpaid. The architect's conditions were stringent, but the builders appeared to have fulfilled them; so the only way that presented itself to the impecunious building committee to evade payment was to blacken the character of their own architect. Accordingly it was alleged that many of the items in the plaintiffs' account were unfair and unreasonable charges; that by agreement no "extras" over 10*l.* in amount were to be charged for, unless the order for such extras had been countersigned; and, finally, that the architect had granted to the builders certificates which he had no right under the contract to grant, and they therefore did not bind the defendants. At the trial Mr. NORMAN gave evidence that there was not the slightest ground for suggesting collusion between the builders and himself, whereupon the church builders said they wished to withdraw all charges of the kind, although he believed that sufficient attention had not been given by the architect, &c. The judge interpreted the contract-deed according to its plain meaning, and held that the architect's decision was to be final and without appeal. Judgment was therefore given for the full amount of the claim with interest.



## TECHNICAL EDUCATION.

AN experiment was tried a few years ago by one of the branches of the London carpenters which deserved more attention than it received. A body of the younger members living about Pimlico engaged, or rather it might be said persuaded, a builder's manager to undertake the superintendence of evening classes for technical instruction. The men were poor, and they found great difficulty in obtaining a place for study. It would have been easy to secure the aid of enterprising publicans or beerhouse-keepers; but, although one of their rooms may answer well enough for society meetings, it is hardly a place in which to pursue scientific studies. The sum asked for the use of a large room was far beyond the means of the men, and the scheme was nearly collapsing, when a clergyman in the district offered the use of a school on the condition (as his congregation was poor) of paying a small sum for gas. No sooner was a room available than the classes were opened, and both teacher and students worked with an enthusiasm that would do credit to any college class. The couple of hours were occupied in very hard study. The teacher was acquainted with every detail of the craft, and he was able to employ technical terms which, however expressive and figurative, are almost unknown outside workshops. There was none of the formality of the lecture-room, and care was taken on both sides that what was said was understood. Anyone who attended the meetings might well conclude that the stuff of which educated workmen are made is to be found in London and of quite as good quality as in Paris or Stuttgart. The Pimlico students did not receive much recognition from the parent society or from builders, and they were ignored by architects. In a short time the men began to feel that they were peculiar, which to the English workman's mind is nearly the same thing as disloyalty to his fellows, and although the expenses were nominal, the classes did not prosper, and were discontinued.

After reading the evidence which was given before the Commission on Technical Instruction, and considering the costly failures of past years, the experiment is recalled to our minds, and we cannot help thinking that the humble Pimlico carpenters did reveal the conditions under which technical education will have to be carried out if it is to be successful in this country. The motive-power must be found in the trade itself. Experience has shown in a good many ways that the English operatives will not be patronised. Model lodging-houses are not tenanted by them although originally planned for their benefit, and they have never given much custom to the benevolent institutions which have been established for the reformation of the working-classes by means of adulterated coffee and insipid liquors. In the Potteries some of the masters pay the fees for their apprentices in the art schools, but the youths who pay their own scot attend more regularly than those who are franked. The genuine workmen are a minority in the evening classes of the schools of the Science and Art Department, and it is well known that the subscribers to the Mechanics' Institute are not all mechanics. It is only in towns where tact is shown in recognising the peculiar spirit of the workman that those institutes can be said to possess a representative character. The reason of so much independence is not difficult to seek. It will, we think, be found in the objection which the English artisan has to be made a tool for somebody else's advantage. And it is all the same to him whether it is proposed to utilise him as a subject in philanthropic, industrial, educational, or political schemes.

The system of the Science and Art Department in its working, whatever it may be in theory, is enough to make a shrewd workman somewhat suspicious of the motives with which the classes are established. Payment on results is all very well if the teachers could be entirely disinterested and the tests infallible. But when it is found that pupils are crammed and trained with an eye to the trainers' payment, the last to admire the system are the pupils. It is not complimentary to human nature to find itself operated on like cattle and poultry for the Christmas market, and fed on a sort of intellectual oil-cake. That this is done is certain. Professor HUXLEY has been examiner under the Department from its commencement, and he told the Commission that "there is a pestilent minority of teachers now,

and always has been, who have no other object in the world than to earn payments, and what they do is this. They get together all the questions that have been put, and form a notion what questions will be set, and they concoct a set of cut-and-dried answers, and make their pupils learn them by heart as if they were learning the catechism." Children in a charity school may be filled with stuff in this way, for it is a fraud to call it teaching; but it is absurd to suppose that an artisan who is probably a grand officer in his lodge will eagerly undergo the operation, no matter how many eloquent throats have grown hoarse in expounding its advantages. In art classes the regulatory power is likewise the master's profit. Mr. WEDGWOOD, in speaking of the schools in the Potteries, tells us how "a master by the system of farming other subsidiary schools is now able to make from 800*l.* to 1,000*l.* a year, and we cannot afford to pay that for one. Our last master, who was an excellent man, left us more than a year ago to go to Derby, because, by farming Chesterfield, Leek, and two or three other schools, he was able to make 1,000*l.* a year. It is a bad system, because it fritters away his personal interest in his pupils, and prevents his obtaining power over them. He has not time to attend to them, or the chance of evoking that enthusiasm in their work which is the chief mark of good teaching in a master." This description may be taken as applicable to other places. It is not altogether the fault of the teachers, many of whom we know are most zealous, and carry on their work without much regard for pecuniary profit. Nor is it easy to propose a better system for the whole country. It is enough for our present purpose to say that the defects of the system are as well known to artisans as to the authorities, and that the former have no interest in screening them.

The cramming system has its temporary use, but it is not able to sustain the tests that business supplies. We are told that Messrs. MINTONS, who were in the habit of giving a cheque to meet the deficit in the local art school, have discontinued so much liberality on the ground that the school was of little use to them. Mr. WEDGWOOD says that although he asks whether a youth has attended a school of design, he attaches less importance to his proficiency there than to his character and industry. "As a rule," he says, "the schools of design turn out slow draughtsmen; boys trained on the works are more suited to our requirements, more ready draughtsmen, with more appreciation of time as an element in the value of work." In practical science there is a still greater disappointment. The Whitworth scholars, who represent the very highest degree of official instruction, are apparently not in esteem in all manufactories, and the manager of one ironworks said they were inferior to ordinary men. No doubt the winning of a prize like the Whitworth may have the effect on minds of a certain class of making labour distasteful, but the possession of so much knowledge ought to be a gain. If, however, a prizeman is of less value than say a foreman who is trained altogether in workshops, what is to be said of the humbler class of students? Mr. CHANNON, a bricklayer, who gave evidence, said to the Commissioners, "I have been through the examination myself, and the use it has been to me as a bricklayer is utterly valueless." There is perhaps a little exaggeration in the statement, but it expresses fairly accurately the opinion of the Department's teaching among artisans. Thus we find a carpenter saying, "The science and art classes are apt to make a student too much of a theoretical man. He may go through their course of solid geometry and building construction, which are the two most useful subjects he can take up, and he would still be wanting in technical knowledge, because there are a great many things which are not laid down in the syllabus, nor could they lay them down because their teachers would not know how to handle them." A workman often expects too much profit from a course of lectures, or the lessons of a single term, and the statements we have quoted might be supposed to have arisen from disappointment. But men of a higher class, who take an interest in the maintenance of the Department, are also compelled to condemn the deception which is carried on in the form of teaching. For example, Mr. WILLIAM ANDERSON, who has had long experience, as the head of an engineering firm, in the training of pupils, says that the classes are not satisfactory on account of the character of



the teachers:—"Young men who know what good teaching is will not attend; they know it is all nonsense. There was a man who gave a course of lectures on chemistry and physics, one of which I went to hear, and all I could say of it was that it was simply beneath contempt. A good many young men attended those lectures at first, but they dropped off one after the other; they felt it was no use attending them." This is no exceptional opinion, and the evil described is so general we need not be surprised if people begin to doubt whether the old-fashioned way of training was not better adapted to produce more sterling workmanship.

The defects of the Department's schools of science and art all seem to arise from one cause. Too much is attempted. BLACKSTONE says that the Courts of Equity became a necessity owing to the evils which arose from the universality of the statute and common law, and the universality of the Government schools has grown to a state that demands a remedy. No one can say what is the purpose of the schools. They are not schools of design, or of manufactures, or educational establishments in the ordinary sense of the phrases. This want of a definite aim has encouraged vagueness in teachers and students, and in examiners too. Let us take the last, for something should be said about the tribunal which puts the seal on the works of the art schools. Every one knows of the national competition, in which the very best works produced in the schools are scrutinised. A practical character is needed in this part of the system, even if dispensed with elsewhere, for the merit of a design depends on its capability for execution. The judges should, therefore, be men who have had experience in manufactures. Now, let us see how the work is done. Colonel DONNELLY, the chief of the executive, was asked by one of the Commissioners to say what steps are taken to insure that the designs which are sent up are submitted to persons who have acquaintance with the particular manufacture to which the designs are intended to be applied, as in the case of lace. The reply was, "I may say that generally there is somebody appointed to examine the design, who is more or less conversant with the particular industry to which the design is intended to be applied, for instance, Mr. MORRIS, who is technically conversant with one or two branches of industry. I do not know who specially looks after lace, but I think we have somebody conversant with lace-making." It will be observed that almost every second word suggests doubt, and when the director is in this condition, how can the awards in lace be expected to give satisfaction in Nottingham? The same question was put to Mr. BOWLER, Assistant Director of Art, and he answers, "We have not practical men for metal work, for instance; but the artists who act as judges are competent to say whether they would be good designs for the purpose of metals or would be better for pottery. They are high authorities, members of the Academy, and architects of eminence; Mr. MORRIS, for instance, is one. He has also a general knowledge of ornament, and the architects have a general knowledge of what could be done in stone or in brickwork." The Commissioner might well have observed that it was this "general knowledge" which is the bane of the schools. When Mr. MORRIS, who is so prominently put forward to deter objectors, is asked the question, he is far from being so confident about the perfection of the selection. "The competition in which I have been judge," he said, "has been in things which have already received the third-grade prize; whether somebody would be required to be added to the staff of judges for the first examination, I do not know." There are a great many other things in connection with the Department about which it is politic to plead want of knowledge.

If a system of technical education is to be a success, the uncertainty which has been a characteristic of the Department schools must be removed. All knowledge is good in its way, but the need of the present time is that kind which can only be given by specialists. A manager in Messrs. EASTON & ANDERSON'S works would be far less glib of speech than the Department official, whose lecture, as above described, was below contempt; but the gain to the apprentices from an hour's teaching by him would be very different to what it was after hearing the South Kensington man. It is not, however, every manager who has

the faculty of teaching or the inclination to undertake the office, and therein, it must be owned, lies the great difficulty which has presented itself to those who have been asked to suggest improvements in the existing system. On another occasion we shall attempt to express their conclusions.

(To be continued.)

## LANDSCAPE IN ART.—II.\*

ACCORDING to Mr. RUSKIN, the first mountain naturalism is to be found in the background of the *Tribute Money*, by MASACCIO, in the Brancacci Chapel, at Florence, and, so far as Italian art is concerned, Mr. GILBERT agrees in this opinion, although he asks us not to forget what had been done elsewhere by VAN EYCK. The Brancacci picture is fast decaying, but a copy of a photograph in its present state shows plainly that the artist was impressed with the superiority of natural hills over all conventional types of them. Another quality of MASACCIO'S background is that the houses are suggestive of reality, and in scale have some correspondence with the figures. The painter's works have been often described, still attention has been concentrated on the figures, which are surprising examples not only of power but of moderation, and in this as in other cases, Mr. GILBERT throws a new light on the work, when he points out the character of the landscape. KUGLER claims priority for GOZZOLI in the search after fidelity, and BURCKHARDT bestows much praise on the fabulous splendour of his gardens and landscapes and fine woody scenes. But Mr. GILBERT says that atmosphere is absent from the scenes, and that they have none of that unity which MASACCIO introduced. Much more of that painter's spirit is found in the frescoes of GHIRLANDAIO, with the addition of peculiarities which may have been derived from Flemish examples. One of these is the arrangement of the rocks, which probably was derived from the fractured strata in quarries, and another is the round turf knoll which caps every rock. The modern admirers of BOTTICELLI would fain see the perfection of landscape as of figure-work in his paintings, but all that can be said of them is that the backgrounds are rather expressive of that sadness in which young pessimists take delight.

LEONARDO DA VINCI studied landscape not merely with a view to business like an artist, but as a philosopher. Among the miscellaneous observations which are found in the medley called the "Treatise on Painting," are several on this branch of art. The titles of a few will suggest their nature, viz., objects seen at a distance; a town seen through thick air; the green of the country; greens of a bluish cast; the colour of the sea from different aspects; why the same prospect appears larger at some times than others; sunbeams passing through the openings of clouds; the beginning of rain season; climates; dust; how to represent the wind; wildernesses; the horizon seen through water; the shadow of bridges on the surface of water. In the memoranda under those heads we can trace an opposition to the recipes for making landscapes which apparently were then in vogue. LEONARDO was no admirer of cut-and-dried rules in art, and, although of surpassing genius, he was humbled before the infinite variety that is seen in nature. "Whoever flatters himself that he can retain in his memory all the effects of nature is," he says, "deceived, for our memory is not so capacious; therefore consult nature for everything." His remarks are so subtle that it is a pity that some one did not endeavour to obtain a commentary on them from MALLARD TURNER, who alone possessed the power of expressing the mystery of light and movement which fascinated DA VINCI. In everything connected with the artist we find a puzzle, and one is the difference between his theory and practice in landscape painting. The backgrounds in his Louvre pictures do not suggest the observer of nature, and, although Mr. GILBERT speaks of the divine calm which pervades the distant country in the *Cenaculum*, the condition of the picture through the wear and tear of time, the repainting of sacrilegious hands, the vandalism of soldiers, and the carelessness of monks differs so much from what it

\* "Landscape in Art before Claude and Salvator." By Josiah Gilbert. John Murray.



was when LEONARDO ceased to work on it, that we are not justified in speaking of any of its qualities with certainty. Once on looking at the *Vierge aux Rochers* the background recalled to us the description of the Mammoth Cave in Kentucky, in which there is a weird mimicry of above-ground forms that becomes at length oppressive, but can never be forgotten. We were not surprised to find a similar idea in Mr. GILBERT's book when speaking of the picture. "Some stalactite cavern," he writes—"perhaps that of Oliero, near Bassano—must, we suppose, have captivated his shuddering fancy, and so he paints this memorial. Dark obelisks and teeth of rock shoot forth straight from the waters, that chilly, dark wind round their bases, and yield dull green reflections. They are met by a jagged curtain from above, and between the two, fearful gleams of white light penetrate, revealing some sprays of leafage." Very different is the storm scene that is shown in DA VINCI's pen-and-ink drawing which is at Windsor. This is apparently a record of a scene that was witnessed, and it is remarkable that DA VINCI, like TURNER afterwards, assumes a position in which he can look down upon the earth.

It would take too much space to follow Mr. GILBERT as he surveys the progress of landscape art. We must pass to TITIAN, a painter who, happily for mankind, was not troubled by the doubts and fears, disaffection, and remorse which impeded the full display of the powers of DA VINCI and MICHEL ANGELO. One of the best proofs of the naturalness of TITIAN is found in the fact that old-fashioned observers of country scenes, like UVEDALE PRICE, who were free from the cant of criticism, were fascinated by the graciousness of his works. It is only in autumn that we have much variety and richness of colour, and accordingly they supposed that it was from that season the painter drew inspiration. "It has often struck me," says PRICE, "that the whole system of the Venetian colouring, particularly that of GIORGIONE and TITIAN, which has been the great object of admiration, was formed upon the tints of autumn; and that their pictures have thence that golden hue which gives them such a superiority over all others. Their trees, foregrounds, and every part of their landscapes have more strongly than those of any other painters the deep and rich browns of that season. The same general hue prevails in the draperies of their figures, and even in their flesh." So strong a believer was PRICE in the unity which comes from following nature, that he was able to point out the discordance which is now seen in TITIAN's *Ganymede* through the bright blue sky which was painted in it by CARLO MARATTI, making the flesh appear almost black. The opinion of the English country gentleman has been confirmed by critics and painters. TITIAN has been called the HOMER of landscape, and, according to Sir CHARLES EASTLAKE, he painted "the grandest landscapes the world has seen." Mr. GILBERT has already explained the relation between the painter and the mountains of Cadore, and in the present volume he returns to the subject, as may be judged from the following extract:—

It was at Cadore that the companionship of cloud and mountain, which he was the first to dwell upon as a subject for art, would be constantly before him. Think of the round white bags scattered athwart the sky that served for clouds so long, or of the sweet but endlessly-repeated bands of cirro-stratus of more poetical observers, and then turn to the powerful storm-clouds of Titian that roll with might about the mountain tops and are heaped up into the sky. But that Masaccio once, and Bellini once or twice, had hinted at such a conjunction, it would seem as if between Lucretius and Titian no observant eye had witnessed that magnificence. Titian knew well not only that mountains are among the grandest symbols that nature offers of power, mystery, duration, and majesty, but also how much is gained by their fellowship with clouds. To him they were two great landscape powers, and he composed mountain and cloud together, each answering to each, like the parts of a chorus. Well, therefore, may it be said that Titian stands at the head of landscape art. He took a far wider range than had been taken before; he saw, more than any one before, the varied power and expressiveness of scenery, and he treated it all with a rare grandeur—nay, solemnity of feeling. He is never led into the fantastic; he never wearies with a confusion of startling effects, such as we find in Altdorfer, or occasionally, with all his genius, in Tintoret. His feeling for deep harmonious colour and for breadth of chiaro-oscuro (greatly indebted in both respects to Giorgione) is shown as much in his landscape

as in his figure subjects; and there is as much of dignity, whatever the scale, in his tints of scenery as in the portraits of princes, senators, or soldiers, with which they are so often associated.

Mr. RUSKIN believes that TINTORET is a greater master of landscape than TITIAN, but in that opinion Mr. GILBERT does not agree. In TINTORET's grandeur, he says, it is rare to find calmness; he has no sublime simplicity, no still and golden glow. But in a subject of this kind it is difficult to decide, and perhaps it would be wiser if no comparisons were instituted between artists whose merit was that each endeavoured to express his own nature.

Mr. GILBERT's admiration for the great Venetians does not prevent him doing justice to artists of other schools. He speaks well of RUBENS' magnificent sketching, which is so suggestive of the highest possibilities, and says truly that "he was more sensitive to the poetic side of nature than his pictures of proud pageantry would lead one to expect." It is remarkable that, in spite of the esteem in which RUBENS was held among English connoisseurs, his works have had little influence on English landscape art. REYNOLDS, who was an admirer of RUBENS, says that his landscapes, like those of the Dutch school, are transcripts of particular scenes, which he heightened by introducing a rainbow, a storm, or some accidental effect. CLAUDE, on the other hand, adopted the principle of figure painters, and composed his pictures out of parts of a great many beautiful scenes, and he was averse to the use of accidents. But this manner was productive of surprising results, and Mr. GILBERT expresses what has been generally felt when he says that it was CLAUDE who has made the Italy that, since his time, has filled the imagination of travellers and poets. TURNER, who was ambitious to measure himself against CLAUDE, was aware of this, and his *Modern Italy* is an attempt to supplant the influence of the man he considered his rival in creating an ideal Italy, which no amount of travel will exactly realise. It is with TURNER's name that Mr. GILBERT concludes his book on landscape, just as REYNOLDS wished to close his discourses with MICHEL ANGELO, and after his survey of the history of the art, from the earliest times, he has decided that among all the artists TURNER was the greatest. Here are the reasons for his judgment:—

In the first place, Turner took possession of the world of atmosphere. All the skyey vault to its uttermost recesses, its openings into the heart of heaven, its infinite gradations both of light and colour, the tender veilings of cloud, and their wind-borne masses—all the region of the air and the glory of it—was his, as none had ever possessed it before. Distance with its unsearchableness, its innumerable tints and faint suggestions—distance with its ineffable charm—was rendered by him as by none other. All the witchery of water, on stream or river, lake or ocean, was at his command. He knew how to avail himself of the utmost grace of form to be found in hill, mountain, and tree, and with unparalleled skill could work all these materials into one complex but exquisitely perfect scene. Well, too, did he understand how to link the spectacle of nature with the story of human life; man is there, not as a mere ornament or adjunct, but as the keynote of his subject. . . . There are, we may admit, many and grievous inequalities, deficiencies, faults, in Turner's work; but he has grasped the master key, and whosoever would penetrate by the way of pictorial art into the shrine of nature's symbolism, must take that key and enter by this door.

We commend Mr. GILBERT's volume to the attention of our readers, both artists and amateurs. It fills a void in art literature, and from the general spirit in which the subject is treated, a reader will find the book as delightful as it is instructive.

#### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE eighth ordinary meeting of the Institute was held on Monday evening, Mr. Alfred Waterhouse, A.R.A., in the chair.

Mr. ALEXANDER PAYNE announced the death of Mr. John Middleton, of Cheltenham, who, while away in Wales, had been stricken with paralysis, and died on Friday, the 13th inst. Mr. Middleton had been in practice for thirty years as an architect, and for a while at Darlington. He then spent some years in travelling abroad, and afterwards repaired to Cheltenham, but without any idea of practising there. He, however, prepared plans gratuitously for the church of All Saints, and had resided there and practised ever since.



The Chairman said they would all lament to hear of the death of Mr. Middleton, and were much obliged for the short memoir read by Mr. Payne.

A paper was then read by Mr. RALPH NEVILL, F.S.A., on

#### Roof Coverings.

Mr. NEVILL, after stating that it was difficult to obtain from the older members of the profession who were in full work long and exhaustive papers on any subject, expressed his conviction that considerable benefit would result from the discussion of subjects of practical interest introduced in short papers requiring little preparation. He could not attempt to deal exhaustively with so large a subject as roof coverings, so he would confine himself to what he could speak of from practical experience. Nearly all roofs in rural districts were constructed either of tiles or slates, the former being superior from the point of view of picturesqueness and non-conductiveness of heat, the latter from that of cheapness and lightness, and especially closeness of fit. One objection to tiles was the impossibility of getting them to lie quite close. In the great snow-storm of 1831 the snow, in the form of a dry snow dust, was driven before a strong wind, and he supposed there was not a single tiled roof that the snow did not penetrate, and this occurred also with felted roofs. The outcry consequent on this had been so great that he had endeavoured to find some easy method of meeting the difficulty, and what he had to say that night was the upshot of his considerations. He then pointed out the objections of the old traditional mode of laying tiles. This was by use of pins of wood, willow or hazel, oak as most durable, or deal as most accessible. These were succeeded by cast-iron pins nailed into the laths. They split the laths, so that in stripping a roof the whole structural connection might be found no longer to exist. Bedding tiles on hay—one of the oldest and commonest plans—was most objectionable, and there were also serious drawbacks to bedding in mortar. The various modes of laying felt under tiles were next described, and the objection to its use noted—namely, its habit to stretch, the likelihood of its causing the rafters to rot, and its short durability. Mr. Nevill then described the plan suggested by himself. He advocated covering the backs of the rafters with an inch of concrete or plaster, in which the pins for the tiles were fixed, the plaster being laid on the laths in the ordinary way, 3-inch rose nails being first driven into the backs of the rafters standing out one inch, care being taken to keep the nails out of the line of the tile-pins; the plaster or concrete to be made of selenitic lime mixed with coke breeze and sand, as it was essential that it should set quickly. It should be trowelled to a smooth hard face. Before the plaster had quite set, the tiles should be laid, the pins being pressed into the plaster. It was important that the pins should not be more than 1½ inches long. Should the plaster further become too hard, the pins must be driven in with a hammer. The eaves lath should be 1½ inches thicker than usual, in order to stop the plaster. The valleys should be carefully trowelled, and the hips would require a raised roll. No practical difficulty occurred in the case of chimney-stacks. It would be apparent from this description that there would be a coating of concrete all over the roof, which would throw off any damp that might penetrate through the tiles, and would make the rooms underneath much more equable in temperature. Specimens of concrete plaster that had been used were exhibited. The advantage of such a roof in preventing the spread of fire was pointed out. Objections might be raised on the score of the increased weight of the roof covering, but Mr. Nevill said he had not found it necessary to increase the scantling of the roof timbers. It might also be thought that the timbers would decay for want of ventilation, but hitherto no signs of decay had appeared in roofs so treated. The cost, as a rule, would not be more than 15s. per square above ordinary tiling, and several tables of comparison had been prepared. Mr. Nevill concluded by referring to the advantages this system of laying tiles possessed, and as being likely to prove extremely useful for the employment of the large tiles now coming into use, such as pantiles, Phillips's, &c.

Mr. W. G. COLDWELL also read a short paper. He said that about a fortnight after the earthquake in Essex, on April 22 last, motives of curiosity had led him to visit the district, and, after an inspection of an area of over 40 miles square, he had been profoundly impressed with the want of security of the plain tile roofing. The tile roofs had come down almost *en masse*, and it was evidently most desirable to adopt some system of laying tiles different from that now in vogue. With reference to lead, no more important subject could be suggested for discussion than the deterioration in the quality of lead now supplied. About fifteen years ago some trifling repairs were needed in an important building. It had an open timber roof with oak boarding internally, and fir boarding to receive the lead. On examination, it was found that on the underside of the lead, a film of white powder existed in lines corresponding with the joints of the boarding, thus indicating that injurious

action had taken place from below. This on being submitted to a chemist, Dr. Frankland, was declared to be white lead, and Dr. Frankland's report was a most important and comprehensive one on modern lead. The lead was found to contain the least amount of silver, and it was probable that the modern resilvering process really rendered the lead more liable to injury from acid vapours than the process which did not remove so much silver from the ore. Mr. Coldwell also alluded to various methods of covering iron roofs.

Mr. McLACHLAN next read a paper descriptive of roofing materials as employed in North Germany—namely, tiles (plain and ornamental), slates, copper, zinc, paper, wood-cement (*Dachpappe*), &c. Examples of tiled roofs were mentioned, and the good effect of these roofs with dormer windows, what would be called batswing dormers, noted. Slates had been introduced during the last fifty years, and in the towns he visited he had failed to see any old example of a slated roof. Buildings at Hamburg (parts of the Courts of Justice) and at Berlin (the Central Cattle Market and Polytechnic) were roofed with Welsh slates in the English manner. He had met with no instance of a lead roof covering, and had been told that its use had been superseded. Roofing paper answered where great economy was required, as also for temporary purposes. The paper was impregnated with coal-tar, from which the oil had not been extracted, and covered with powdered chalk. Care was necessary in fixing it, and the roof pitch must not be too steep, or the rain would wash out the oil. Every two years the coat of coal-tar must be renewed. Wood-cement was one of the most important roofing materials, and had become a great favourite during the last twenty years. The name wood-cement was a misnomer. A general description of this roofing material was then given, though certain elements in the manufacture were said to be a secret. Turf was a good thing to finish off the roof with, as it prevented disturbance to the loose gravel placed on the top.

Mr. SLATER said he had had some experience in England of the wood-cement roof, which had been used in a brewery, constructed now three years. It had answered, at least the material had up to the present served its purpose well, and was a good non-conductor of heat. He had not heard turf recommended before, but there was no doubt the gravel did wash out with the rain, &c. He wished Mr. Nevill had had a longer experience of the roof he had described. There could be no doubt it was heavier than a tile or slate covering, and if an ordinary roof would bear the weight, it would seem that they had been in the habit hitherto of making ordinary roofs unnecessarily substantial. As roofs moved, it would be interesting to know the effect of movement on such a roof, and whether the plaster would split. Mr. Slater spoke of slightly vitrified tiles as better adapted to keep out the weather than the non-vitrified tiles, but he considered the increased cost of them would prevent their being adopted here. The upper edge of the exposed portion of the tiles might, however, be chamfered off instead of standing up from the roof, and this would diminish the chance of their being stripped off the roof. He thought the question of wind pressure on roofs was one not sufficiently understood, and one interesting enough for an evening's discussion by itself.

Mr. W. H. WHITE said that no reference had been made to the French plan of using copper hooks instead of nails for fastening tiles or slates. The wind blowing under them merely rattled them, without doing them any injury. M. Viollet le Duc was, he believed, the first to introduce the use of the copper hooks. He himself had used them with advantage at Cherbourg, where he had seen all the trees in a wood blown down and the greater part of the roof of a château, where the slates were nailed, destroyed. In company with Professor Roger Smith, he had seen a deposit of half an inch of the greyish powder spoken of by Mr. Coldwell when the lead was being taken off the dome of the Invalides in Paris. Viollet le Duc had been induced to use lead alone, having found that the oak decayed and gradually dropped away, till nothing but the lead was left. He also found that deal was not affected in this way like oak.

Mr. PALEY, of Lancaster, spoke of a letter received from a client making inquiries as to a certain fluffy stuff under the slates of his house. The building had had a narrow escape of being burnt down. Having examined the stuff, he found it was felt. A chimney had caught fire, and sparks had blown under the slates and caught the felt, which had become unravelled, and you could scarcely tell what it did look like, but it was strongly impregnated with tar. He must never, he thought, use that again. Mr. Nevill's paper bearing on the use of cement was important, and seemed to point in the right direction. His experience in regard to slating was, however, that if properly fastened by copper nails to good battens and properly pointed it was perfectly impervious to snow, and would last nearly for ever, and so far was the best roof covering that could be had.

Mr. BRODIE asked for information as regarded the item of repairs.



Mr. A. PAYNE said he should perhaps best consult the interests of the meeting by not reading the paper he had prepared as the hour was getting late, but would refer, in short, to the points he thought of interest. His paper on "Concrete Roofs and Roof Coverings" briefly recapitulated statements he had already made on the subject in that room. The employment of concrete, he considered, would be advantageous for flat roofs, for all kinds of fireproof roofs, domes and vaults, and roofs of buildings of a monumental character in which great strength or durability were required. As an example of flat roofs, Mr. Payne made mention of one that had come under his notice as district surveyor for Hackney, where Mr. H. M. Millar, builder, was erecting some small houses in which several ingenious applications of concrete were adopted. Part of the flat roofs were formed as follows: the top storey was covered by joists, 8 inches by 3 inches at one end, and 3 inches by 3 inches at the other, made by cutting through a 11-inch by 3-inch joist diagonally, so as to get fall without waste, placed about 12 inches apart. These were covered by boarding in 2½-inch widths, and ¾-inch thick, each board being 1¼ inches distant from the next one, an important point, because, if laid close, they would swell, spring up, and break the roof. On this, as centreing, was added 2 inches of Portland cement concrete as a roof covering. The concrete was made of brick rubbish ground to powder, with Portland cement added, thoroughly mixed dry, then wetted and brought to the consistency of a thick paste. It was laid on the boarding, smoothed over with a trowel, and the roof was complete. A coat of tar was sometimes added, but was not absolutely necessary. Mr. Millar claimed to have had eight years' experience with such roofs, had made about fifty, and never had a failure but in the case of some done during a frost. More frequently the centreing boards were put under the joists, embedding them, and so making the roofs practically fireproof. In buildings of greater importance, the same system might be adopted with iron joists instead of wood.

Mr. BLASHILL said he preferred good and large fillets to flashings, where the roof came against a wall. With the most carefully put-up flashings he had found water got in.

Mr. MACVICAR ANDERSON recommended the cutting of a small chase in the brickwork of the wall the roof came in contact with, and so let the ends of the tiles into the wall, making good afterwards with cement. This was better than fillets or flashings, which he looked on as an abomination.

Mr. NEVILL said that though his roof did appear terribly heavy, he had tested it in many cases, and never found any sign of sagging or difficulty. Anything wrong, he thought, would have shown itself in two years. There was no difficulty as to repairs beyond what was common to any other roof. He had claimed the advantage for slates over tiles for keeping out snow.

A vote of thanks having been passed to Mr. Nevill, the proceedings terminated.

## TESSERÆ.

Canova's Church.

M. VALERY.

ABOUT four miles from Asolo, on a small elevation at the bottom of a valley commanded by a triple range of mountains, is the temple raised by Canova, near Possagno, a village containing fourteen hundred inhabitants, where he was born. Marble is common in these mountains, and one would say that it was to give it animation that this great artist entered the world at their foot. Part of the riches of Possagno consists in the abundance of a stone precious by its quality and by the diversity of uses to which it is applicable. Canova's family was engaged in the working of this quarry. The apparition of this pompous monument of art in the bosom of savage nature, in the midst of woods and rocks is marvellous. The portico, composed of eight fluted columns of the ancient Doric order, is similar to that of the Parthenon, the vestibule to that of the temple of Theseus, the cupola resembles that of the Rotunda, and, as in all the temples of antiquity, the light only enters by the doors and the roof, which has an opening of sixteen feet in diameter. This church, dedicated to the Trinity, was built from designs of the Venetian architect Selva, but which were in several instances corrected and changed by Canova. Through an absurd and very ancient custom at Possagno, females alone have the privilege of entering the church by the great door. This portico of the Parthenon is thus devoted to the particular use of the female peasants, and it has been necessary to open two side doors for the men. The church, begun in 1819, was not finished till 1830, and not brought into use for divine service until 1832. The death of Canova, which happened in 1822, must have contributed to these delays. His heirs have been accused of evincing indifference towards the completion of a monument which would prodigiously decrease the amount of their inheritance; but it appears that the charge,

is unfounded, and that the work from some details in the construction could not proceed more rapidly. Such was the benevolence of Canova, and such the noble use he always made of his riches, that, when at the close of his life he wished to construct the church of Possagno, his resources were found to be insufficient, and he was obliged to resume the most profitable of his labours, and with the same fatigue to which indigence alone had first condemned him. The expense of the building has been a million francs, and the interest of a capital of 113,437 frs. 66 c. is set apart for repairs. The interior of the building has an air of simplicity, rather harsh and naked, Canova not having been able to execute some works with which he had intended to decorate it.

## A Roman Palace.

N. HAWTHORNE.

The courtyard and staircase of a palace built three hundred years ago are a peculiar feature of modern Rome, and interest the stranger more than many things of which he has heard loftier descriptions. You pass through the grand breadth and height of a squalid entrance-way, and perhaps see a range of dusky pillars, forming a sort of cloister round the court, and in the intervals from pillar to pillar are strewn fragments of antique statues, headless and legless torsos, and busts that have invariably lost—what it might be well if living men could lay aside in that unfragrant atmosphere—the nose. Bas-reliefs, the spoil of some far older palace, are set in the surrounding walls, every stone of which has been ravished from the Coliseum or any other Imperial ruin which earlier barbarism has not already levelled with the earth. Between two of the pillars, moreover, stands an old sarcophagus without its lid, and with all its more prominently projecting sculptures broken off; perhaps it once held famous dust, and the bony framework of some historic man, although now only a receptacle for the rubbish of the courtyard and a half-worn broom. In the centre of the court, under the blue Italian sky, and with the hundred windows of the vast palace gazing down upon it from four sides, appears a fountain. It brims over from one stone basin to another, or gushes from a Naiad's urn, or spirts its many little jets from the mouths of nameless monsters, which were merely grotesque and artificial when Bernini, or whoever was their unnatural father, first produced them; but now the patches of moss, the tufts of grass, the trailing maidenhair, and all sorts of verdant weeds that thrive in the cracks and crevices of moist marble, tell us that nature takes the fountain back into her great heart, and cherishes it as kindly as if it were a woodland spring. And, hark! the pleasant murmur, the gurgle, the plash. You might hear just those tinkling sounds from any tiny waterfall in the forest, though here they gain a delicious pathos from the stately echoes that reverberate their natural language. So the fountain is not altogether glad after all its three centuries of play. In one of the angles of the courtyard a pillared doorway gives access to the staircase, with its spacious breadth of low marble steps, up which in former times have gone the princes and cardinals of the great Roman family who built this palace.

## The "Apollo Belvedere."

JOHN FLAXMAN, R.A.

There are many reasons for the belief that the *Apollo Belvedere* is only a copy. The general appearance of the hair and the mantle are in the style more of bronze than of marble; and it is mentioned in the work on the Pope's Museum (Pio Clementino), by the Chevalier Visconti, who illustrated that museum, that there was a statue in Athens, I do not know whether it was in the city or some particular temple, an *Apollo Alexicacus*, a driver away of evil, in bronze by Calamis, which had been erected on account of a plague that had been in Athens. From the representations of this statue in basso-relievos, and with a bow, it is believed that the statue might be a copy of that. One reason I have given is, that the execution of the hair and cloak resembles bronze. But another thing convinces me of its being a copy. I had a conversation with Visconti and Canova on the spot, and my particular reason is this. A cloak hangs over the left arm, which in bronze it was easy to execute, so that the folds on one side should answer to the folds on the other. The cloak is single, and therefore it is requisite that the folds on one side should answer to the folds on the other. There is no duplication of drapery. In bronze that was easy to execute, but in marble it was not, therefore, I presume, the copyist preferred copying the folds in front, but the folds did not answer to each other on one side and the other; those on the back appear to have been calculated for strength in the marble, and those in front to represent the bronze from which I apprehend they were copied. There is another reason. The most celebrated figure of antiquity is mentioned by Pliny, viz. the *Venus of Cnidus*, by Praxiteles. He mentions it in a remarkable manner, for he says that the works of Praxiteles, in the



Ceramicus, not only excel those of all other sculptors, but his own elsewhere, and this *Venus* excels all that he ever did. Now it seems inconceivable that so fine a statue as the *Apollo* could have been executed without its name being brought down to us, either by Pliny or Pausanias, if it had been esteemed the first statue in the world.

#### Gothic Ornament and Natural Forms.

G. E. STREET, R.A.

Natural forms cannot be exactly imitated in architectural construction; they are too slight and supple, and, moreover, for their full development, they require the addition of natural colour, a consummation which has even been attempted on some modern realistic ironwork, with (as it seems to me) the most contemptible result. It has been well said that the best natural work is really only a *noble abstraction* of natural form. This is accomplished by taking, first, the essential elements of the thing to be represented, then the rest in the order of their importance, and using any expedient to impress what we want upon the mind without caring about the mere literal accuracy of the expedient. Suppose, for instance, a peacock has to be represented, the whole spirit and power of the bird are in the eyes in its tail. Express them, and you have done all that you can require. And so in an old marble inlay in a Venetian palace, we see a peacock with expanded tail, the eyes of which are marked by spots of colour, and the outline of the feathers by lines so conventional in design that one could hardly at first believe it would produce the desired effect: yet, in truth, the effect is distinct and admirable, far more so than any more close imitation of nature would have been. The direct imitation of natural forms was occasionally attempted in early work, but always under the severest conditions, simply as ornament, never when work was to be done or weights carried. There the architect always felt it to be wiser to recur to conventional treatment of nature.

#### Théodore Rousseau's Landscape Art.

L. LETRONNE.

On looking over a study of mine, he observed that a rough sketch need not largely partake of the special nature of a study, the object of which is to lead to a certain amount of facility with the brush—which facility, indeed, would come soon enough. I promised to finish more carefully. "As to that word 'finish,'" he said, "what finishes a picture is not the quantity of details put into it, but the truth or completeness of the final result. A picture is not bounded only by its frame. No matter what its subject may be, it is sure to have one principal object upon which your eyes will rest, all others which it contains being merely its complement. These others interest you comparatively but little. After the one chief object, there is nothing to catch your eye. Here, then, you see the real limit of the picture. This principal object or figure should be made to have the same powerful effect upon everyone who looks at your work. You must, therefore, return to it continually, and strengthen its colour in every possible way." He enumerated a few works of the great masters which bear out this theory. He particularly mentioned Rembrandt, who comprehended it more clearly than any other painter. "But, on the other hand," he added, "if your picture contain the most exquisite details, spread over the whole breadth of the canvas, people will look at it with indifference. It will be all equally interesting—or, rather, it will all be without interest. It will have no real limits; it might be prolonged indefinitely in any direction without affecting its character. You will never come to the end of it, so you will never finish it. A picture is finished when the effect of its *ensemble* is complete. Barye's magnificent lion at the Tuileries has every hair of its mane in greater perfection, in reality, than if the sculptor had laboriously carved them one by one."

#### Suggestions for Construction from Nature.

PROFESSOR COCKERELL, R.A.

Sir Christopher Wren reflected that the hollow spire which he had seen or built in so many varieties was, after all, but an infirm structure, and he sought that model which should enable him to impart to it the utmost solidity and duration. Simple was the original from which he adopted his idea. He found that the delicate shell called *turretella*, though extremely long and liable to fracture from its base to its apex by the action of the water amidst the rocks, was rendered impregnable by the central column, or newel, round which the spiral turned. Therefore, in his spire of St. Bride's, he establishes the *columella* in the centre, round which he forms a spiral staircase to the top issuing on stages of arched apertures, thus giving us (if not the most beautiful) certainly the most remarkable and enduring spire hitherto erected. When Brunelleschi was charged with the erection of the dome of Sta. Maria, at Florence, of nearly equal diameter with that of the Pantheon, but at more than twice its height from the pavement upon a base raised on piers, and by no means of the strength and

cohesion of the original model—the Pantheon—it was apparent that in giving it the same solidity, the weight would be insupportable on such a foundation. How was this object to be accomplished? Brunelleschi reflected that the bones of animals, especially of birds, possessed solidity without weight, by the double crust or hollow within. But, above all, he remarked that the dome which completes the architecture of the human form divine was constructed with a double plate connected by the light and fibrous but firm walls of the hollow *cancelli*, so that strength and lightness were combined in the utmost degree. Brunelleschi followed this model in his dome of Sta. Maria, and the traveller now ascends to the lantern between the two crusts of plates forming the inner and the outer domes. Michel Angelo adopted this contrivance in the dome of St. Peter's, and almost all the subsequent domes are upon the same idea.

#### Beauty and Utility.

PROFESSOR G. WILSON.

It is astonishing how many people think a thing cannot be beautiful if it is cheap, or comfortable if it is beautiful. They tell you the price of a carpet, as if its cost were the measure of its beauty, and then nail over it an ugly crumb-cloth, to save themselves the pain of walking upon it. The only human vocation in which we universally agree that beauty and utility shall never be separated is that of the soldier. But is not this passing strange? Your warrior shall fight in a graceful dress, ride a finely-caparisoned horse, kill his enemy with a handsome sword, and save his skull from being cleft by a splendid helmet. But in all the arts of peace we treat Beauty as if she were a lazy fairy who would take no part in useful work. This is truly atheistic and diabolic doctrine; for if there be one truth which the Author of all has taught us in His works more clearly than another, it is the perfect compatibility of the highest utility with the greatest beauty and with the greatest simplicity of material.

#### The Nelson Column, Trafalgar Square.

SIR F. CHANTREY, R.A.

I do not mean to say that a column is not a fine thing: in itself it is a very fine thing; the taste of ages has proved that it is so, and any man would be a fool who attempted to deny it. But is it a thing suited to your purpose? Now, what is your purpose? To perpetuate the memory of a great man. Then durability is the quality you should look for. Those gimcrack things you say you have been to see of stone and metal combined, will never stand; the stone and metal will never hold together. Make a column as solid as you will, make it of blocks of stone piled like Dutch cheeses upon one another, still the stone will crumble, and vegetation will take place in the joints. Besides, columns have got vulgarised in this country. The steam chimneys in every smoky manufacturing town supply you with columns by the dozen. In a country like Egypt it is quite a different thing. A column or an obelisk is a fine object there; with a flat all round you, as far as your eye can reach, you are glad of anything to break the uniformity of the long straight line that joins the earth to the sky, and you can see them fifty miles off; but huddled in such a town as London, a column will be lost. It will give you a crick in your neck to look up at it.

#### Improvements in Greenhouses.

SIR J. PAXTON.

In 1828 the various forcing-houses at Chatsworth were formed of coarse, thick glass, and heavy woodwork, which rendered the roofs dark and gloomy. My first object was to remove this evil. I lightened the rafters and sashbars by bevelling off their sides. I also contrived a light sashbar, having a groove for the reception of the glass; this groove prevented the displacement of the putty by the sun, frost, and rain. In the construction of glass-houses requiring much light there appeared this objection:—In plain, lean-to roofs, the morning and evening sun, which is of the greatest importance to forcing fruits, presented its direct rays at a low angle, and consequently very obliquely to the glass. At those periods most of the rays of light and heat were obstructed by the position of the glass and heavy rafters. This led me to the adoption of the ridge and furrow principle, which places the glass in such a position that the rays of light in the mornings and evenings enter the house without obstruction, and present themselves more perpendicularly to the glass when the least powerful, and more obliquely when most powerful. In 1834 I resolved to try a further experiment on the ridge and furrow principle, in the construction of a greenhouse of considerable dimensions, which answers admirably. I made a still lighter sash-bar than any previously used, on which account the house (although possessing all the advantages of wood) was as light as if constructed of metal. The house presents a neat and light appearance, and while it makes an admirable greenhouse, is also an economical building, for, notwithstanding the heavy tax on glass (since removed) it only cost at the rate of 2d. and a fraction per cubic foot.



## NOTES AND COMMENTS.

A BLACK and White Exhibition is to be held in Paris from March 15 to April 15, under the presidency of M. EUGÈNE GUILLAUME. It will comprise drawings with crayon, pen, and charcoal, etchings, mezzotints, drawings on wood, lithography, &c. Each artist is to have the right to send two drawings. The prizes will be one gold medal, six silver medals, three bronze medals, and five diplomas. The jury of admission contains well-known artists, in whom proposing exhibitors can have confidence.

THE Lords of the Treasury have sent a collection of the works which have appeared under the direction of the Master of the Rolls to the Mitchell Library in Glasgow. There are over two hundred volumes, including the Domestic Series from the reign of EDWARD VI. to that of CHARLES II., the Home Office Papers, Scottish, Irish, and Colonial Papers. Then there are the documents relating to the reign of HENRY VIII., which the late Mr. BREWER edited with so much care; the valuable Venetian Papers, which Mr. RAWDON BROWN deciphered; and the Carew Papers from Lambeth. Lastly are the Mediæval Chronicles and Memorials. In many libraries books of the kind might be relegated to "the dust and silence of the upper shelf," if one could be found of sufficient dimensions; but the Mitchell Library in the daytime and evening is attended by readers who are able to grapple with the driest Blue-books, and they will find pleasure in the new additions to the valuable library which the rich merchants of Glasgow permit to be so badly housed. The Treasury are apparently in a liberal mood, and the Council of the Institute of Architects ought to seek for a selection at least of the Record Office publications.

PRINCE BISMARCK appears to be indifferent to national considerations when he is in search of what tradespeople call a good article. A turbine was lately required to be erected on his estate at Varzin, but, after a competition, the contract was entrusted to a Zurich firm. In consequence, there is much dissatisfaction among the advocates of a protection of indigenous industry in Prussia.

THE subjects of the two pictures by Mr. LONG, R.A., which have just been added to the gallery in Bond Street where the artist's *Anno Domini* is exhibited have been well chosen. They illustrate the legend that ZEUXIS was allowed to select five young women, each of them being distinguished for some particular beauty, to serve as models for his figure of HELEN. In one picture there is the competitive examination, and the contrast is exhibited between the satisfaction of those who are selected and the disappointment of the remainder. The companion picture shows the artist at work. The figures of the girls are posed in somewhat statuesque attitudes, but, under the circumstances, that cannot be considered a defect. The colouring is bright and pleasing. The introduction of a black lyre in the hand of one of the girls interferes with the general effect, and most of the archaeological details belong to a later period than the time of ZEUXIS. The pictures are hardly equal in execution to the *Marriage Market* and others of the artist's works, but they are excellent exhibition works, and sightseers cannot fail to appreciate them.

ST. VALENTINE'S DAY has been celebrated by Sir EDMUND BECKETT in inditing an affectionate epistle on the misdeeds of architects. This time the grievance is the adoption of a solution of arsenic as a preservative against dry rot in a church. The offending architect who prescribed it was so anxious that no harm should arise to the labourer who handled the watering-pot containing the fluid, that he warned the contractor to use gloves and a veil. It might be assumed that an architect who had displayed this care was not likely to do anything which would bring danger upon the congregation. But Sir EDMUND assumes that, not only in that case, but generally, church-goers are to enjoy "the flavour of arsenical floors." We must say that, although we believe a fluid in which arsenic was an ingredient would not be more dangerous than a sheep-dipping mixture has been to farmers (for the two are allied

in composition), there is no reason why such a fluid should be considered more efficacious than others which are altogether innocuous. The remedies against dry rot are so numerous, ranging from corrosive sublimate to common salt, there is not much difficulty in finding one as useful and more simple than the contents of the arsenical watering-pot.

THE Society of Arts appears to have ceased placing tablets on the houses which have been occupied by distinguished people in London. The owners and occupants were not always pleased with the attention which was given to their premises by hordes of wandering sightseers. In Paris there is a society which erects similar records, and three tablets are about to be placed. One is to be on the house No. 6 Rue de Furstemberg, occupied by EUGÈNE DELACROIX the painter, the second is for the house of MIGNET the historian in the Rue d'Aumale, and the third is for DIDEROT's house in the Rue de Richelieu.

MR. WATERHOUSE selected eight out of the ninety-four designs submitted in the competition for the Newbury District Hospital. They were by the following architects, viz.:—MESSRS. BEAZLEY & BURROWS, E. W. MOUNTFORD, NEWMAN & NEWMAN, J. B. PHILLIPS, H. G. TURNER, TAYLOR & GORDON, WEBB & TUBBS, and W. H. WOODROFFE. Eventually Mr. WATERHOUSE decided in favour of Mr. H. G. TURNER's design, and the Trustees, acting on this advice, have determined to adopt Mr. TURNER's plans, and employ him as their architect.

LORD BROUGHAM, among other feats, is to be credited with the creation of Cannes, and the keepers of hotels and lodging-houses have recognised their debt by erecting a statue of his lordship. Twenty years since, when the place had become known, it was possible to buy land in good positions at from 2½ frs. to 3 frs. a mètre. The price has increased tenfold. The speculative builder and land-jobber have found their way to Cannes, and, according to a recent letter from the place, "they have been running up villas by the score; they have been hacking hills and ravines about in the most objectionable manner; they have been outraging nature with tame "landscape gardening" by line and rule, as witness the defacement of the slopes below Cannes; they have been mercilessly hewing down the olives, although, happily, they have been sparing the firs; and they still hold a quantity of land hanging over the market." This is grievous to read about; but it must be owned that the majority of visitors readily pardon eccentricities of architecture in a health resort where vegetation is luxuriant and the society select.

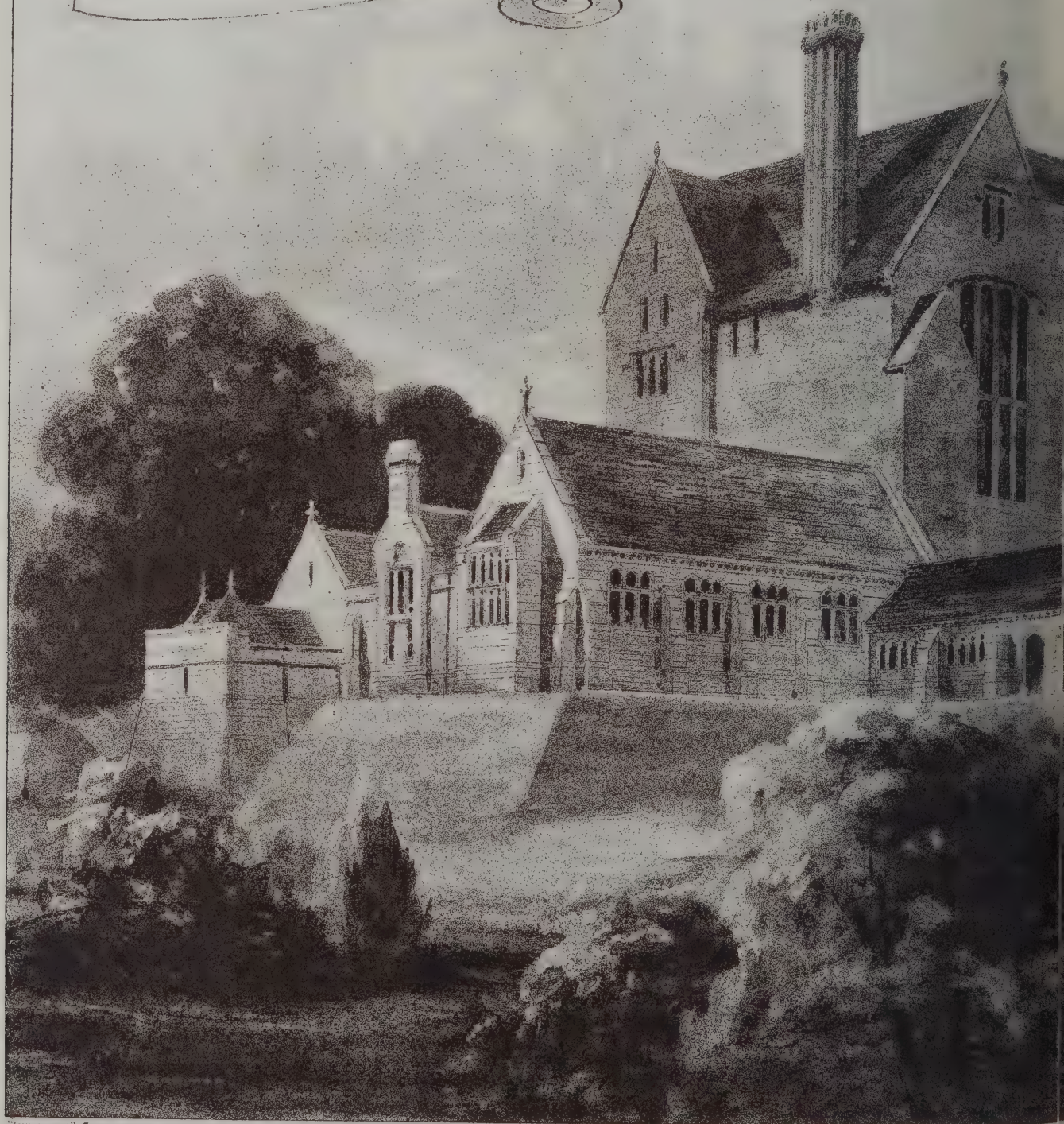
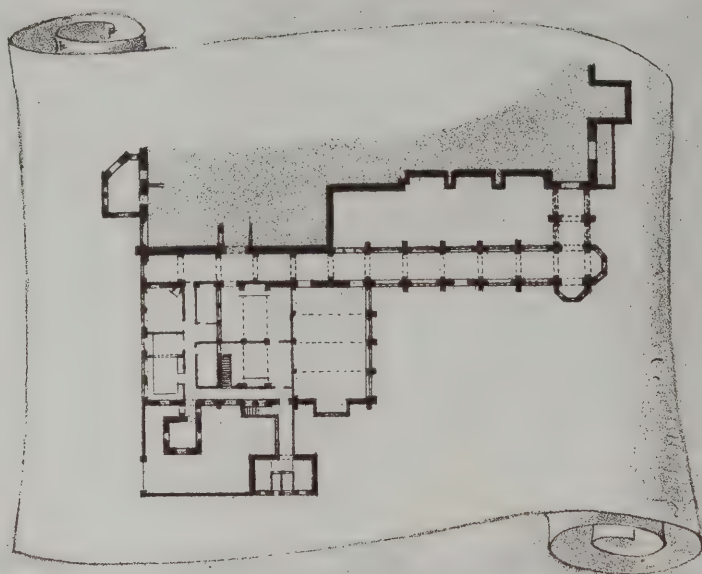
THE position which SHAKESPEARE occupies in universal literature is suggested by the number of editions of his works which have been collected in the Free Library at Birmingham. At the end of 1884 it contained 6,734 volumes. Of these volumes, the English, including 228 editions of the complete works of SHAKESPEARE, formed 3,877 volumes, the German 1,847, French 492, Italian 147, Russian 62, Dutch 85, Hungarian 45, Spanish 31, Swedish 33, Danish 29, Polish 22, Bohemian 20, Greek 14, Finnic 7, Icelandic 5, Portuguese 5, Croatian 2, Frisian 2, Hebrew 2, Latin 2, Flemish 1, Roumanian 1, Roumelian 1, Ukraine 1, Wallachian 1, and Welsh 1. The library possesses a copy of the folio of 1623, a few of the original quartos, and the splendid series of hand-facsimile copies by Mr. ASHBEE, which Dr. HALLIWELL PHILLIPS issued in forty-eight volumes, and in so limited an issue that probably not twenty complete sets are now to be found.

THE new Edinburgh Dean of Guild has commenced his duties by calling attention to the restricted powers he possesses in respect of sanitary affairs. According to Mr. GOWANS, the building trade in Edinburgh labours under the disadvantage of having to prepare plans for the Court without knowing exactly what the requirements of the Court are, and he therefore proposed that a statement pointing out what was absolutely necessary in regard to drains and sanitary conveniences should be prepared by the committee and sent to the Dean of Guild Court as a recommendation. This sanitary guide is at present under the consideration of a committee.









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ADDITIONS TO THE OL

MESSRS PUGIN





CE. MAYFIELD, SUSSEX.

ROITECTS.













"ENNERDALE," SUTTON, SURREY.









"INK-PHOTO", SPRAGUE & CO, LONDON.

ANTICIPATION.  
BY WALTER BLACKMAN.





"INK-PHOTO" SPRAGUE & CO. LONDON.

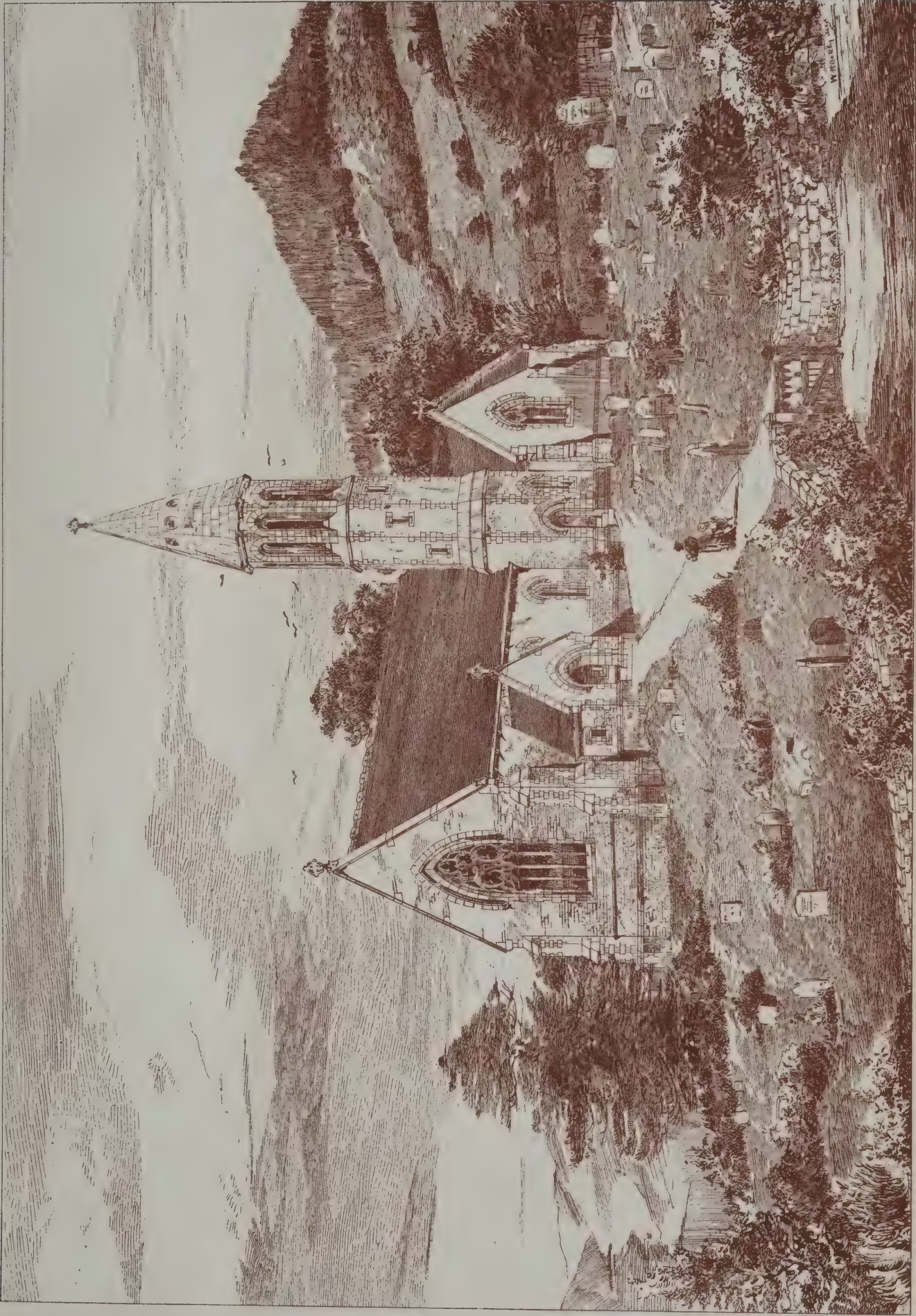
AN ITALIAN GIRL.

BY WALTER BLACKMAN.









LLANSAINTFREAD CHURCH.  
S. W. WILLIAMS, ARCHITECT.







## ILLUSTRATIONS.

I. ANTICIPATION. II. AN ITALIAN GIRL.

THE figure subjects in the present number are from paintings by Mr. WALTER BLACKMAN, one of the American artists resident in Paris, and who has made a mark there by paintings of heads of the character of the *Italian Girl*. The other illustration is a successful work in a different field.

ADDITIONS TO OLD PALACE, MAYFIELD, SUSSEX.

THE old palace at Mayfield is an historical old place. It was formerly one of the palaces of the Archbishops of Canterbury. Some twenty years ago it was bought by the late Duchess of LEEDS, and was then restored by the late Mr. E. WELBY PUGIN, and converted into a convent and school for the "Sisters of the Holy Child." The old banquetting-hall is now the chapel of the convent. The additions which are now being made comprise the cloisters, nuns' refectory, kitchen, dairy, &c. The material used in the construction is the local stone, with Bath stone dressings. The roofs are tiled. Messrs. L. & H. ROBERTS, of Islington, are the contractors for this portion of the work. The old gatehouse has recently been restored by Mr. E. T. HURBON, contractor, of Tunbridge Wells. The architects are Messrs. PUGIN & PUGIN, of 111 Victoria Street, Westminster, and 19 Surrey Street, Strand.

ENNERDALE, SUTTON, SURREY

THIS house is situated on the high part of the chalk district, and commands extensive views. The materials used are CHUTER'S red bricks, Ockley tiles for the vertical tile-hanging, and Broseley tiles for the roof. The hall and passages are paved with DIESPEKER'S mosaic paving. The work has been carried out by Mr. J. B. POTTER, of High Street, Sutton, from the designs of Mr. HERBERT D. APPLETON, A.R.I.B.A.

LLANSAINTFREAD CHURCH.

A CHURCH existed at Llansaintfread, which is within seven miles of Brecon, for many years, and in 1690 one was rebuilt there. But after two centuries it fell into a state that might be called ruinous, and Mr. GWYNNE-HOLFORD, whose family has been long connected with the place, resolved to erect a new building. Plans were accordingly prepared by Mr. STEPHEN W. WILLIAMS, architect and county surveyor, of Rhayader, and the foundation-stone of the new building was laid by Mr. GWYNNE-HOLFORD, on December 2, 1884. The new church, which is cruciform on plan, comprises nave and chancel, with north and south transepts, entrance porch at south-west angle of nave, octagonal bell turret giving porch to vestry, with ringing chamber over. The vestry and organ chamber will be situated in the south transept, and the north transept is intended to replace the Buckland Chapel, which stood on the north side of the chancel in the old church, and which contained the family monuments of the Buckland family. The style adopted for the new church is transitional Early English of the thirteenth century. The nave windows are simple lancets cusped; the west window of four lights of rich geometrical tracing; the east window, which is to be glazed with stained glass, is of three lights, and transept windows of two lights; all of these traceried in character with the west windows. The roofs of nave, transepts and chancel will be of pitch pine, the former hammer-beamed roofs, the principals springing from carved brackets of Beer stone. The chancel roof will be panelled and moulded with carved bosses at the intersections of the moulded ribs. The seating of the church, the pulpit, and reading-desk also to be of pitch pine, the warming apparatus one of PORRITT'S underground stoves. The floor will be laid with encaustic tiles, and under the seats with patent wood-block flooring. The interior of the church will be lined with red Grinshill stone with a cavity between the inner and outer walls, which are built of the native stone from a quarry of Mr. GWYNNE-HOLFORD'S near the site; and all external dressings are to be of red Alvely stone from Worcestershire. The roofs will be covered with stone tiles from the Bargoed quarries.

The contractors are Messrs. EDWARD DAVIES & SON, of Newtown, Montgomeryshire.

## THE LIVERPOOL CATHEDRAL.

THE following is an extract from a letter of Mr. William Morris, respecting the site for the proposed cathedral in Liverpool:—

As to the site of the new building, it is really difficult for me, who do not know Liverpool, to say. A good architect may make a bad site a good one. Still I admit that it seems a pity to accept an obviously bad site merely because it is cheap. As to the building itself, the only chance of its being a good one lies in its being built in some form of Gothic architecture. It really seems too stupid to take up a style like the sham Classical and to imitate an imitation—all the more as it really has been proved to be ugly and bad. Whatever may be said of our chances of developing a style of our own nowadays, the only chance is to start from a style which had growth in it. The Classical, or rather late Renaissance, style is but a bundle of whims—not a style at all really. To use it at present, when we are at least beginning to understand the historical value of art, is an evidence, it seems to me, of the feeling of mere cynical despair, which is so fatally common among our so-called cultured classes. Another word as to this building. The Liverpool folk, if they want to do something which will make its mark, must not be in a hurry; in a place like Liverpool anything like pettiness would be destructive of success. You want a building which shall both be big and look big. It would be much better to be contented with building only a part of it (*e.g.*, the choir) at first, just enough to house the church people, than to hurry up a building which might look complete, but which would be both small and mean.

## M. LEGROS ON FRENCH AND ENGLISH ART TRAINING.

THE evidence which was given by M. Alphonse Legros, the Professor of Art in University College, before the Royal Commission on Technical Education, was as follows:—

You are professor at the Slade school of University College?—Yes.

I believe you were formerly teacher of the etching class at South Kensington?—Yes.

You have had thorough experience in the system of art teaching as established now in France, and as we have it in England?—I have seen both systems, and thoroughly understood them.

Will you kindly give the Commission your opinion on the relative value of the two systems of art teaching, the system adopted in France and that in England, looking at it from the point of view which we are especially appointed to consider—that of industrial applications?—There are many schools in France for teaching industrial design which are very unimportant; but what is the case in France is that in the art schools those who do not become artists become industrial designers, they know how to draw. The great point is that they should have a thorough instruction in art.

Then, with regard to the English system, does the same remark apply?—No.

Will you kindly state in what respect it differs?—The principal thing is that the system of teaching which holds good in England is slow, vicious, feeble, and antiquated. What takes place in the English schools is that the students are set to work to copy an apple, or a sphere, or a cone, on which they spend a year, a second year is spent in copying a bad torso, and thus the student reaches thirty years of age and knows nothing. There may be, of course, varieties or exceptions, but this is the view of a man who looks at the system as a whole. Looking at this question from the student's point of view, a student at a Slade school has to pay 19 guineas per annum for the instruction. What son of an artisan or poor man could obtain one of the two annual studentships which are offered in that school?

Whilst, on the other hand, you state that the art schools in France are wholly gratuitous?—Yes; the schools in France are quite gratuitous. My father paid five francs, which is four shillings; that is the whole amount he paid for my instruction. I had to buy drawing materials; but my instruction only cost four shillings.

Then would you wish to see the instruction in art in England also made gratuitous?—Certainly; I would make the schools absolutely free. At the Slade school a young man, when it comes to the time for luncheon, takes a handsome gold watch from his pocket, and says, "I am off to lunch." There is no real application to the work; and among 100 young men there is only one who shows proper application to his studies.

You believe then that the gratuitous art instruction which is given in France produces a very marked effect upon the French industries, which are dependent upon that art instruction?—Yes, certainly; because it is the sons of working men who want to profit by it. Without this gratuitous character of



the instruction, the instruction is provided for those who do not want it.

Are you acquainted with the system of evening art instruction given under this department, the Department of Science and Art, throughout the country?—I know very little of it. There was an evening school at the Slade school during Mr. Poynter's time, but I only painted and drew there before the students in the morning classes.

Perhaps you are acquainted with the system of examinations; you may have inspected the drawings done for the English prizes, which are exhibited yearly at South Kensington?—I have seen a few of the drawings, but I notice in them the defect that they are very slowly done—only three or four in a year; the students always persisting in finishing up with delicate points; and if there are not more men driven mad by it in England, I cannot tell the reason. Mr. Poynter introduced the system of stumping, which was a great improvement.

We have been informed by certain teachers that this finish is a matter of some importance; that a man who can do a very finished drawing can afterwards accomplish anything he pleases?—The students who have spent their time in that way have no head for rapid work, spending, as they do, six weeks or a month in shading up a sphere; they get no ideas into their brains. What is wanted is to fill the mind with the appreciation of form, and this the English system does not give.

I believe that the system, under Mr. Poynter's direction, has undergone considerable alteration in the direction of quick and rapid drawing?—Yes, it has been much improved under his direction.

With regard to the number of examinations which the students have to pass in England, what opinions have you formed on that point?—A student has to pass examinations in too many things.

Your remarks have reference, I presume, to the system of the art instruction in the South Kensington schools?—Yes, there is too much examination work and too many lectures. I often noticed that my students were absent, and I inquired the reason, and I was informed that they were attending lectures. These lectures, I consider, are of very little value as a means of art training.

Then you are of opinion that the system adopted in France, namely, that pure art training shall precede any training in the art of designing, is the proper method to adopt?—Yes, because I do not see the difference between industrial art and pure art. I consider that the best designers and the best draughtsmen are those who can make the best drawings or have the best knowledge of art.

But it is one thing to draw the human form, and it is another thing to draw designs for silks or for cottons. Do you believe that it is necessary that the designer for silks and cottons should be able to draw the human form?—The difference is one of a very delicate shade. A man who knows how to draw very well can easily apply his knowledge to industrial designing.

Are you of opinion that up to a very advanced stage of their training the same art training applies to those students who are intended for the production of pictures as to those who are destined to follow industrial designing?—I believe the instruction should be identical. All the best artists of the Renaissance period were designers for furniture or for the industrial arts and manufactures.

What method would you think necessary or desirable in order to direct industrial designers into that particular branch of art for which they are intended, the tendency of nearly all art students in this country being to rush into pictorial art?—Nothing will stop that tendency but poverty.

Could you suggest any special method of training which should qualify and induce artists to take up a particular industrial line?—You must make them design a fabric which shall be actually carried out, or a piece of furniture which shall be actually made. If their designs are only on paper, the artists are like generals who have never fought. You must teach them practically; you must make *repoussé* work in *repoussé*, or carving in actual work, and not merely sketches on paper.

As long as you keep to designs on paper, it is your opinion that nothing more can be done than training in the direction of pure art?—Nothing, because they only prepare projects or schemes; they do not actually execute. And that has been the fault of your great designers. Flaxman was only a designer and not an actual executor of his designs, or merely to a very small extent, chiefly in pottery. Flaxman was forced to confine himself to working for pottery and to designing work, though he was a real artist who failed to have an opportunity to carry out his work in marble; but perhaps this is rather wide of the mark.

What is your opinion as to the natural aptitude of English character for the reception of artistic training as compared with the French?—The difference is primarily in education; the parents in England think that their children are born with an innate genius for landscape painting or something else. There is too much natural genius in this country, not enough study.

Do you consider that there is any inferiority in the capabilities of the English people in regard to the reception of art tuition?—Not at all. I think there is a great deal of natural energy among the young people here, and a great desire to distinguish themselves. The only thing is the influence of wealth; it is necessary for that to be eliminated.

Is there any reason why we should despair of producing in England a higher stage, or as high a stage, of artistic training in regard to industrial art, as that which now exists in France, if we adopt the same, or equally good, methods of instruction?—I am perfectly sure that there is not the least reason; but the gratuitous education lies at the root of the whole question.

Can you explain why it is that the principal designs for various kinds of industrial work are at present obtained in France?—Because Monsieur Dalou and myself, and other gentlemen like us, who occasionally want money, make a design, and you buy it.

Is there not also a very large supply of designing applicable to industries which is always available in Paris, and which is almost a commercial commodity?—It is not a very strong school; it is not these people who make the designs, or only exceptionally. It is perfectly true that there are a large number of designers, but they were educated for other purposes; they were educated and trained as painters and artists, but have failed and have become designers. All men study to become generals, not to become corporals, but they do not all become generals.

But that is not the view which we hear from the designers in Paris themselves?—No doubt, but I am betraying them.

Do you not attach very great importance to the influence of the splendid museums and art galleries in Paris, and, in fact, throughout France, as familiarising the people with high types of form and curve and other matters which go to make artistic feeling?—Certainly. But you have museums and galleries in London, and in England generally, comparable to those in France, only there are fewer here; but the fact is that in the provinces of France there are a large number of people who have not done well in Paris, but are thought a great deal of in the provinces, whereas in London you turn out a certain number of individuals who are very uniform in their general capacities, and who, when they go into the provinces, all show a stereotyped form of excellence.

Is that stereotyped form the fault of the education they receive, or is it the fault of national character?—It is not due to the national character, but to education. But another important point is that in France the best artists have studios where they take young men and teach them, in some cases gratuitously. This is a system wholly wanting in this country.

What is your opinion as to the actual artistic power and excellence of the workpeople in England compared with Frenchmen?—Certainly the English working-men are as capable as the French working-men. Open free adult classes, and you will prove that the English workman is as good as the French workman. In saying this I am speaking against my own interests, as I am connected with a school where fees are payable.

Are you aware that, connected with the Department of Science and Art, there are night classes at which instruction can be obtained at a very reasonable price?—It is quite possible that that may be the case; but the great want in England is that of skilled teachers; your artist academicians do not care to teach, and you suffer from the want of proper teaching.

Do you not think that, upon the whole, the national artistic power in England is, after all, rather on the advance than on the decline, as illustrated by the exhibits in recent times in large international exhibitions?—I think that it is on the increase, but the progress is very slow; there is progress, but it might be much more rapid.

I am speaking of art as applied to industry and artistic productions?—I think that they are doing better in England in those respects; there has been an enormous change in the last thirty years.

Do you think that the instruction given in the French primary schools has a very great effect in the production of art?—Little or none.

Could you point out any other provisions which you would think necessary in order to improve the art teaching in England besides the establishment of cheap or even gratuitous classes?—In addition to this cheap instruction, you must have a teacher who is an exhibitor at the exhibitions, and who, by his position, can encourage his pupils and lead them on.

Your opinion is, in fact, that the English teachers are not artists, and the artists are not teachers, whereas both ought to be blended in one?—Yes.

What is your opinion as to the models and casts supplied to our art schools and established in our chief art educational establishments, compared with similar articles supplied to the French schools?—In your London school at Kensington you have plenty of models and casts, more than the French schools; but among them are a good many bad ones which



should be got rid of. This has been done to a certain extent already by Mr. Poynter; but in the country schools there are not enough models and casts.

Do you think it of very great importance to encourage the establishment of museums of industrial and suggestive art in the provinces in England?—Yes, that would be a very good thing; the influence for good would be enormous.

And do you think that these collections should apply especially to the industries of the districts, or that they should be of a more general art educational value?—They should be general, rather than special. If you confine yourself to one branch you can only choose the best thing in that one branch; and these would have to be superintended by artists; and that is why I think the collection should be of a general character.

Do you think it of great importance to establish modelling classes throughout England?—Certainly. I think that those classes would be of the highest importance, both in London and in the provinces; and for every three men you trained who turned out good artists five would turn out good industrial designers.

Do you think that art training, with a view to industrial designing, should be given in direct relation to the materials and the industry to which it is intended to be applied, or should it always be of an abstract nature?—It must be general.

At Sèvres, for example, we found that the art training had special and, in fact, exclusive relation to the china manufacture?—I think that you are scarcely aware that they have two classes of artists there; one the men who give the designs, who are artists in the true sense of the word; the other, the men who are paid so much a year to transfer these designs to porcelain in order to make presents of them. I may mention that Solon was an artist who furnished such designs; Rodin, the eminent sculptor, was another.

In other words, the highest walks of industrial art are always occupied by the true artist?—Yes.

Is there any other point that you would desire to bring before the Commission; we should be glad to hear your opinion on any other matters which may have occurred to you?—I have answered the questions put to me; I have nothing to add.

#### PUBLIC TASTE IN SCOTLAND.

AT the banquet which was given on the eve of the opening of the exhibition of the Royal Scottish Academy the president, Sir William Fettes Douglas, in proposing "The Lord President, Magistrates, and Town Council of Edinburgh," said that he had mentioned before in that room what a great thing in the world taste was. He was not going to allege that the Magistrates were deficient in it. Taste went a great deal further than most people believed. If they understood it properly, it took the place of virtue in the world to a great extent. For instance, it was bad taste indeed for a man to murder his neighbour, or to carry off his neighbour's wife. It was very bad taste for a School Board to propose alterations on the finest modern Classical building in existence, for a wretched inhabitant of the finest square in Britain to build a façade to his house which destroyed the beauty of that square, or of a wretched man in one of the best localities in Glasgow to propose to paint the outside of his house in Rob Roy tartan. When he went along certain streets of the town, and saw the abominations put up in the streets, he was inclined to use, mentally, very bad language. He was not alone in that matter. Very many people did the same. Suppose there were one thousand people each day passed these abominations and indulged in muttered curses; if they multiplied that thousand by 365, what a fearful amount of muttered curses they got. And that did not go on for one year, but for many years. If they multiplied these muttered curses by the number of years in which they were indulged, it became a question whether, say, 100,000 or 1,000,000 muttered curses must not be considered quite as bad as two or three murders. The Magistrates were about to apply to Parliament for an Act to extend their powers. He wished they would get powers also for preventing many abominable changes in towns. The Magistrates and Council were the judges of such matters, but they ought to take power to consult the best judges in the world—he did not care where they were to be found. When the Dean of Guild was applied to for permission to alter a house, he should send the plans to London, out of the way of all possible influence in Edinburgh, and get the very best advice, and pay a good fee for it. They should no longer have those abominations which were put up every day in Edinburgh. He was glad, indeed, to hear that the Council were about to apply for powers to erect new municipal buildings. He should willingly pay his taxes for that purpose if they employed a good man. If they did that he thought the Council would confer a great boon upon the city.

Mr. D. Bowie has bequeathed 2,000*l.* for the erection of a Wesleyan church in Blairgowrie, N.B.

## Bygones.

*"Antiquity after a time has the grace of novelty."*—HAZLITT.

### SHELLEY ON THE THREE TEMPLES AT PÆSTUM.

IN March 1818 Percy Bysshe Shelley, the poet, left England never to return. A year before, the Court of Chancery had decreed that he was not a fit and proper person to take charge of his two children, and he fled to Italy possibly from a fear that the law might afflict him still more. He appears to have resided for some months at Lucca, where he commenced his "Prometheus Unbound," then at Naples, and afterwards at Rome, where the poem was completed. While at Naples, in February 1819, Shelley visited the famous ruins at Pæstum, and as the following account of his journey was in a letter to his friend, Mr. Peacock, it is probably the least known of the poet's writings:—

There was a Greek city, sixty miles to the south of Naples, called Posidonia, now Pesto, where there still subsist three temples of Etruscan architecture, one almost perfect. From this city we have just returned. The weather was most unfavourable for our expedition. After two months of cloudless serenity, it began raining cats and dogs. The first night we slept at Salerno, a large city situate in the recess of a deep bay, surrounded with stupendous mountains of the same name. A few miles from Torre del Greco we entered on the pass of the mountains, which is a line dividing the isthmus of those enormous piles of rock which compose the southern boundary of the bay of Naples, and the northern one of that of Salerno. On one side is a lofty conical hill, crowned with the turrets of a ruined castle, and cut into platforms for cultivation—at least every ravine and glen, whose precipitous sides admitted of other vegetation but that of the rock-rooted ilex; on the other, the ethereal snowy crags of an immense mountain, whose terrible lineaments were at intervals concealed or disclosed by volumes of dense clouds, rolling under the tempest. Half a mile from this spot, between orange and lemon groves of a lovely village, suspended as it were on an amphitheatral precipice, whose golden globes contrasted with the white walls and dark green leaves which they almost outnumbered, shone the sea. A burst of the declining sunlight illumined it. The road led along the brink of the precipice towards Salerno. Nothing could be more glorious than the scene. The immense mountains covered with the rare and divine vegetation of this climate, with many-folding vales, and deep dark recesses, which the fancy scarcely could penetrate, descended from their snowy summits precipitously to the sea. Before us was Salerno, built into a declining plain, between the mountains and the sea. Beyond, the other shore of sky-cleaving mountains, then dim with the mist of tempest. Underneath, from the base of the precipice where the road conducted, rocky promontories jutted into the sea, covered with olive and ilex woods, or with the ruined battlements of some Norman or Saracen fortress. We slept at Salerno, and the next morning before daybreak proceeded to Posidonia. The night had been tempestuous, and our way lay by the sea sand. It was utterly dark, except when the long line of wave burst, with a sound like thunder, beneath the starless sky, and cast up a kind of mist of cold white lustre. When morning came, we found ourselves travelling in a wide desert plain, perpetually interrupted by wild irregular glens, and bounded on all sides by the Apennines and the sea. Sometimes it was covered with forest, sometimes dotted with underwood, or mere tufts of fern and furze, and the wintry dry tendrils of creeping plants. I have never, but in the Alps, seen an amphitheatre of mountains so magnificent. After travelling 15 miles we came to a river, the bridge of which had been broken, and which was so swollen that the ferry would not take the carriage across. We had, therefore, to walk 7 miles of a muddy road, which led to the ancient city across the desolate Maremma. The air was scented with the sweet smell of violets of an extraordinary size and beauty.

At length we saw the sublime and massy colonnades, skirting the horizon of the wilderness. We entered by the ancient gate, which is now no more than a chasm in the rocklike wall. Deeply sunk in the ground beside it were the ruins of a sepulchre, which the ancients were in the custom of building beside the public way. The first temple, which is the smallest, consists of an outer range of columns, quite perfect, and supporting a perfect architrave and two shattered frontispieces. The proportions are extremely massy, and the architecture entirely unornamented and simple. These columns do not seem more than 40 feet high, but the perfect proportions diminish the apprehension of their magnitude; it seems as if inequality and irregularity of form were requisite to force on us the relative idea of greatness. The scene from between the



columns of the temple consists on one side of the sea, to which the gentle hill on which it is built slopes, and on the other of the grand amphitheatre of the loftiest Apennines—dark purple mountains, crowned with snow, and intercepted there by long bars of hard and leaden-coloured cloud. The effect of the jagged outline of mountains, through groups of enormous columns on one side, and on the other the level horizon of the sea, is inexpressibly grand.

The second temple is much larger, and also more perfect. Beside the outer range of columns, it contains an interior range of column above column, and the ruins of a wall, which was the screen of the penetralia. With little diversity of ornament, the order of architecture is similar to that of the first temple. The columns in all are fluted, and built of a porous volcanic stone, which time has dyed with a rich and yellow colour. The columns are one-third larger, and, like that of the first, diminish from the base to the capital, so that, but for the chastening effect of their admirable proportions, their magnitude would, from the delusion of perspective, seem greater, not less, than it is; though perhaps we ought to say, not that this symmetry diminishes your apprehension of their magnitude, but that it overpowers the idea of relative greatness, by establishing within itself a system of relations, destructive of your idea of its relation with other objects, on which our ideas of size depend.

The third temple is what they call a Basilica; three columns alone remain of the interior range; the exterior is perfect, but that the cornice and frieze in many places have fallen. This temple covers more ground than either of the others, but its columns are of an intermediate magnitude between those of the second and the first.

We only contemplated these sublime monuments for two hours, and of course could only bring away so imperfect a conception of them, as is the shadow of some half-remembered dream.

It is needless to say that Shelley was in error in describing the temples as Etruscan architecture, instead of Doric. It is remarkable that he estimates the height of the columns in the Temple of Ceres at 40 feet, while the measured height, including capital, is only 20 feet 4 inches. In the Temple of Neptune, which is the largest of the three, the columns are 28 feet 11 inches high, and in the so-called Basilica 21 feet. Shelley may have written by a slip of the pen 40 feet for 20 feet, but it is more likely that he was impressed by the ruins, and, like the majority of visitors, have fancied that the dimensions are larger than they are in reality.

#### ENGLISH FRESCO PAINTING.

Among the manuscripts in the Soane Museum is one by John Martin, dated 1699, which contains the following instructions for wall-painting as practised in his time:—

1. In painting on walls, to make it endure the weather, you must grind your colours with lime-water, milk, or whey, mixed in size colour-pots.

2. Then paste or plaster must be made of well-washed lime, mixed with powder of old rubbish stones. The lime must be often washed, till finally all its salt is abstracted, and all your work must be done in clear and dry weather.

3. To make the work endure, strike into the wall stumps of headed nails, about 5 or 6 inches asunder, and by this means you may preserve the plaster from peeling.

4. Then, with the paste, plaster the walls a pretty thickness, letting it dry, but scratch the first coat with the point of your trowel longways and crossways as soon as you have done laying on what plaster or paste you think fit, that the next plastering you lay upon it may take good key and not come off nor part from the first coat or plastering; and when the first coat is dry, plaster it over again with the thickness of half a barleycorn, very fine and smooth. Then, your colours being already prepared, work this last plastering over with the said colours in what draught or design you please—history, &c.—so will your painting unite and join fast to the plaster and dry together as a perfect compost. Note, your first coat of plaster or paste must be very haired with ox-hair in it, or else your work will crack quite through the second coat of plastering, and will spoil all your painting that you paint upon the second coat of plastering; but in the second coat that is laid on of paste or plaster, there must be no hair in it at all, but made thus:—Mix or temper up with well-washed lime fine powder of old rubbish stones (called finishing stuff), and sharp grit sand, as much as you shall have occasion for, to plaster over your first coat, and plaster it all very smooth and even, that no roughness, hills nor dales be seen, nor scratches of your trowel. The best way is to float the second coat of plastering thus:—After you have laid it all over the first coat with your trowel as even and smooth as possibly you can, then take a float made of wood very smooth, about 1 foot long and 7 or 8 inches wide, with a handle on the upper side of it to put your hand into, to float your work withal, and this will make your

plastering to lie very even; and lastly, with your trowel you may make the said plastering as smooth as may be.

5. In painting be nimble and free; let your work be bold and strong, but be sure to be exact, for there is no alteration after the first painting, and therefore heighten your paint enough at first—you may deepen at pleasure.

6. All earthly colours are best, as the ochres, Spanish-white, Spanish-brown, terra-vert, and the like; mineral colours are naught.

7. Lastly, let your pencils and brushes be long and soft, otherwise your work will not be smooth; let your colours be full and flow freely from the pencil or brush, and let your design be perfect at first, for in this there is no after alteration to be made.

#### MR. WILLIAM MORRIS ON DESIGN.

THE following evidence was given by Mr. Morris before the Royal Commission on Technical Instruction:—

I believe you are connected with various branches of manufacture in which designing is an important element?—Yes. The business I carry on comprises weaving, dyeing, cotton-printing, carpet-weaving, glass-painting, and cabinet-making.

Do you employ designers?—To a very small extent.

Do you make your own designs?—Yes, mostly; I do not employ designers, because, amongst other reasons, it is so very difficult to get a due amount of originality out of them; the designs which one gets are too hackneyed, and there is the same sort of idea harped upon for ever and ever.

Yours is a peculiar trade?—Quite.

Your forte is originality?—It is necessary for our business merely as a commercial affair. I need not say it is desirable in everything in which one applies design to the industrial arts.

Comparing nation with nation, you believe originality to be a quality possessed by the people of this country?—Certainly. We hear a great deal about the superiority of the French in design, which I do not think is an essential point of difference of character between the English and French as a people.

You think it is a question of training?—To a very great extent; the French are above all things masters of style in the arts of design. For my part, I doubt if they have so much innate love of beauty as a great part of our population has. In matters of style the French are supreme; they can take two or three ugly things and combine them into a congruous whole, which looks plausible at least.

You consider mastery of style to be a national characteristic of the French?—It most undoubtedly is. Being a national characteristic they understand it thoroughly well, and they have worked the vein very hard. As a designer, I think it is that mastery over style which gives the French that superiority in the European markets, in certain classes of goods, which they undoubtedly possess.

Could you define a little what you mean by mastery of style?—What I mean is a kind of faculty which enables a man to take certain elements of form, and work them into a congruous whole, which strikes the eye at once. There is something that goes home to one at once, when a man is *au fait* at style. English designers to a certain extent flounder about, I may say, and they are apt to get vague and scattered.

You say while you think that the French have a mastery of style not possessed by other nations, they have not the same innate love of beauty that a great many Englishmen have?—That is so. I think that in appreciation of beauty, in love for beautiful lines and colours, the French cannot be said to be superior to the English, certainly not in matters of colour.

Then it is rather in the technical application of natural qualities which they may possess, more or less, that you think their superiority consists?—The French have certainly a tendency in all things to system, the turn of their minds runs towards system, and that applied to art produces this tendency towards style which in some respects they overdo to my mind. So long as a thing is in a definite style, it seems to satisfy the ordinary French mind, even though it is obviously ugly.

I suppose what you call style might be described to some extent as congruity?—Yes.

Making one thing fit in with another?—Yes.

Have you paid any attention to the question of our position as designers in various manufactures, distinguishing one from the other?—I know something about it. The department of manufacture into which design enters, that I know most of from my own business, is textiles, and in that department certainly the French have a much greater reputation than we have. We copy largely from the French in some things. I was in Manchester some time ago, and a calico-printer there showed me his designs, and, on my asking where he got them, he told me he got most of them from Paris. From what he said I judge that it is common there to buy parcels of drawings from Paris, and shuffle and piece them into a variety of patterns.

Can you tell us anything about any other trades into which design enters; take wall-papers, for instance?—Wall-papers



are more used in England than in France for what may be considered artistic decoration. I should say that, on the whole, the English designs were more original and better in design than the French, at any rate since the last twelve years. Wall-papers are of rather a higher class in England than in France, on the whole.

Take the coverings of furniture and the hangings of rooms, woven and printed stuffs, as distinguished from garments?—I do not know much of what the French do in printed furnitures, and I do not suppose that to be a strong point of theirs; but on the other hand they have an enormous variety in the way of woven stuffs for furniture, and their cleverness in adapting material and shifting things about is very great. Sometimes we have people call upon us from the South of France, Lyons and Arles, and one is quite amazed at the amount of cleverness shown in these things in the working up of unpromising materials. I do not much admire the goods myself, but they are clever things, and showy, and very cheap.

When you say people have called upon you from the South of France, do you mean designers?—No, people who were bringing patterns to us as upholsterers—people with patterns of stuffs.

It would not follow that the designs originated in Lyons or Arles?—No, I could not say where they were produced. I know that they study their own designs with a great deal of care, and I know there are one or two firms that have carried on the making of furniture stuffs at Lyons for a great number of years.

You would not be surprised to be told that the Lyons people get their designs from Paris?—I should think it quite likely myself. I think it is a thing to be rather deprecated that there should be a class of mere artists like some of these Paris designers, who furnish designs, as it were, ready made, to what you may call the technical designers, the technical designers having next to nothing to do with the drawing, but having what you may call the grinding work to do. The designer learns about as much as is necessary for his work from the weaver, in a perfunctory and dull sort of manner, and the result is not so satisfactory as it would be if a different system were adopted. I think it would be better, when it could be managed, that the man who actually goes through the technical work of counting the threads, and settling how the thing is to be woven, through and through, should do the greater part of the drawing.

When you say better do you mean commercially better?—In the long run yes, because on the whole one must suppose that beauty is a marketable quality, and that the better the work is all round, both as a work of art, and in its technique, the more likely it is to find favour with the public. I must allow, I fear, that the possible change I am suggesting would raise the price of the article. Division of labour does a great deal to cheapen goods; but, on the other hand, I think it does a great deal to deteriorate them.

You think there would be a sufficient demand for a high class of goods, the designs for which were furnished by an artist, who not only prepared the design, but arranged its being put upon the loom?—I should think so myself. There will, of course, always be a very much larger market for the very cheapest articles. In France there is certainly a large market for a high class of goods.

So far as textiles are concerned, you are aware, no doubt, that, as regards the low class of goods, we have nothing to fear from Continental competition, and the object rather is to ascertain how we can best establish a trade and a reputation for goods of a high class?—Yes. But in figure weaving for furniture the French do a great deal which cannot be called low-class goods, but which are cheap considering the amount of show in them; cheap artistic goods, in short.

At present it appears that we have to compete with goods woven in the French departments and designed in Paris?—I do not know quite enough about the French trade to know whether that is so.

So far as silk goods go it certainly is?—I was led to suppose so. I was led to understand that there was a body of designers in Paris, who really practically designed for all the textile trades, both printing and weaving.

That being so, what would you recommend to be done in this country in order to enable us to hold our own against the French?—What I want to see really is, and that is the bottom of the whole thing, an education all round of the workmen, from the lowest to the highest, in technical matters as in others, and that this should be obtainable in the several centres of industry—that is, a man should not be obliged to have to come to London to learn his work, but should be able in some way or other to do all that was necessary in the way of study in his own town, wherever it might be.

Seeing that that hitherto has not been done in France, but that everything is centred in Paris, do you believe that it would be possible for us, by so scattering our forces, to accomplish as good work, good in the sense of paying, as the French are able to do by concentrating everything in Paris?—It would take time of course. Addressing myself to the higher class of

goods, I think the way in which we should look at the thing, as a matter of competition, is not to try to attack the French on their ground at all, but to try to produce our own styles; if we do that we may, in the long run, even command the market in France for designs and so on. To a certain extent, I believe that is the case now, that designs which are being brought out in some classes of art have decidedly attracted the attention of Frenchmen.

Are you now speaking of textile goods?—Rather of the whole range of design in general.

Are you aware of the fact that your own designs have been pirated and applied to a certain extent in France?—I do not know that they have in France. America is our friend in that respect chiefly.

How would you set about the training of designers in the provinces, assuming that it was considered desirable to promote such education in the provinces?—My view is that it is not desirable to divide the labour between the artist and what is technically called the designer, and I think it is desirable on the whole that the artist and designer should practically be one.

And you assume that the artist is to be a provincial?—I should not say that he should necessarily be a provincial, but he probably would be by residence.

How would you train him?—There are two chief things that would have to be thought of in providing facilities for study for the art of design. However original a man may be, he cannot afford to disregard the works of art that have been produced in times past when design was flourishing; he is bound to study old examples, but he is also bound to supplement that by a careful study of nature, because if he does not he will certainly fall into a sort of cut-and-dried, conventional method of designing, which is the bane of most of these French designs that we are talking about; and the only way for a person to keep clear of that, especially one in the ordinary rank and file of designers, is to study nature along with the old examples. It takes a man of considerable originality to deal with the old examples, and to get what is good out of them, without making a design which lays itself open distinctly to the charge of plagiarism. No doubt the only help out of that is for a man to be always drawing from nature, getting the habit of knowing what beautiful forms and lines are. That, I think, is a positive necessity.

How would you organise a provincial school of art with a view to instruction in design?—That is a very wide question. I must say, in the first place, I think a man who is going to be a designer wants to be taught to draw thoroughly. In all these manufacturing towns there are departmental schools of art, and one may assume that a man goes through his course there, which, as far as I can understand, is a good course on the whole.

Are you aware that there is a great difference of opinion with regard to the instruction in drawing that is given in those schools, and that it is stated that in France much more attention is paid to rapidity of execution than in this country?—If it is not carried too far, rapidity of execution is a good thing. I suppose that those who regard rapidity of execution as an important thing mean that one should not expect the students to elaborate their drawings. I quite agree with that; that is to say, I think that in drawing from the round, and so on, elaborate cross hatching and that sort of thing is a mistake; you want to teach form by drawing.

Are you of opinion that that mistake prevails to an injurious extent in our schools of art in connection with South Kensington?—It did so at one time; but I know that Mr. Poynter, the late director of art, tried to correct the evil; he very much objected to what I should call mere mechanical finish in drawings.

Your opinion is, that in examining the drawings which are sent up too much value is not given at present to extreme finish?—Certainly not, as far as I can judge. For several years past I have been one of the judges, at the national competition here, in certain classes; and, in these classes certainly, the judges always make a point of valuing what I should call the fundamental qualities of the draughtsman, his perception of form, and so forth.

If it should be the opinion of art masters in the country that this high finish is necessary in order to obtain a place in these national competitions, that opinion is quite an erroneous one?—Undoubtedly erroneous as regards finish merely for its own sake.

Are there any departures from the present curriculum of the provincial schools of art, that you would consider essential so far as preliminary training goes?—I think not. I do not know with any degree of nicety what the training is, but I think not.

That is to say, assuming they follow out the direction which it is intended to impress upon them from South Kensington?—Yes. Of course every one knows that the character of the work done at the different schools depends very much upon the masters at the head of them. There is one thing which I think, perhaps, might be more impressed upon those masters



than it is, and that is that one does not particularly want to train up the students as picture painters. There are some schools where that is overdone; but that is a matter of accident, owing to the master having a turn in that direction.

You consider it necessary that the designer should be acquainted with the manufacture for which he is designing; you believe that the mechanical application of the design might with advantage be taught in an art school, but you are not sufficiently acquainted with schools of that class to say how they ought to be organised or what is possible in them. At the same time you believe that it is necessary that by some means, either in the school or in the factory, the designer should make himself acquainted with the exigencies of the machine and material in which the design is to be executed?—Yes, I speak as strongly as I can upon that. I think that that is the very foundation of all design.

Do you consider that elementary literary instruction has much influence upon the ultimate success of a workman as a workman?—I should certainly say it has, undoubtedly. I often have great difficulty in dealing with the workmen I employ in London, because of their general ignorance.

Would you consider that, in addition to literary instruction, instruction in drawing should be given in elementary schools, to those who are to become artisans in after life?—I think, undoubtedly, everybody ought to be taught to draw just as much as everybody ought to be taught to read and write.

You are aware that drawing is taught in the elementary schools?—More or less.

Could you give us an idea as to the extent of the general art training which you think it necessary that a man who intended to be a designer should go through? Is he to continue his general art training up to drawing from the life, for example?—It is rather a difficult question to deal with; my own view is that drawing should be taught more or less from drawing the human figure, because it gives you a standard of correctness that nothing else can do. I should not say, however, that it was absolutely essential. There are some people who have no great turn for drawing from the figure, who would nevertheless make clever draughtsmen in drawing plant form.

Do you think that a designer should continue his general art instruction, after he is employed in his trade as a designer, in night schools, and so on?—It would be most desirable: I think that it is the only way in which he would keep his mind fresh upon the subjects that he would be taught there.

You spoke of style as being the characteristic of French art. Is that a matter of education, or is it innate?—I think both. The French certainly have it innately, and they generally take great pains to develop it.

You think, with an improved system of art education in England, the style of English design would be greatly improved?—Certainly; you might easily give a student enough idea of style to answer his purpose, and to go side by side with his own special idiosyncrasy and the idiosyncrasy of the nation.

Do you know whether there exists in London any school of professional designers similar to that which exists in Paris?—I do not think there is such a school. Of late years there has arisen in London a great number of half professional designers, people who would be glad to get work in designing: these people are generally very uneducated in the technique of the arts they design for, which is a great drawback to them and to the public, which does employ them more or less.

Do you know whether those professional designers supply the provinces to any considerable extent with designs?—My impression is that they do not.

## THE HOUSE PAINTERS' TRADE IN LONDON.\*

UNTIL about thirty years ago in nearly all branches of trade, and especially in the building trades, it was the general custom for masters, as the employers or tradesmen were then usually termed, to themselves work at their respective trades, and they, as a rule, took apprentices for the term of seven years. The legal indentures made it compulsory upon these masters to teach the youths, or cause them to be properly taught, their trades. The prevailing custom up to the time I have referred to was for employers to take work from their customers and charge for it according to the amount of material used and the number of hands employed, and the opportunities for making large profits, therefore, did not exist then as now. The relations of "masters" and workmen or apprentices were therefore closer and more intimate and friendly.

About thirty years ago, however, this system of conducting work changed somewhat rapidly for the one of estimating or contracting for the whole work, to be done at a given price and

to be carried out under specifications, with a clerk of works representing the engineers, architects, or surveyors, in the customer's interest. Probably this new system arose from the general difficulty to the customer under the old system of ascertaining how much any given quantity of work would cost until it was fully completed. As soon, however, as the "contract" system of doing work got a hold in the country, it quickly extended and soon became the order of the day.

Under this new system "masters" no longer cared to be bothered to take apprentices to teach them their trade, but sought only for the skilled workmen close to hand. This skill they simply used as a means to accumulate wealth, without giving any attention to its future production. The continuation of this plan for some fifteen or twenty years began to tell its tale, and the deficiency of well-skilled artisans and mechanics was sensibly felt. The employers then found that although they had plenty of labour at hand it was only semi-skilled, and that unless something was done to teach youths their respective trades the whole character of English work must inevitably be lowered, and a natural decadence of industrial excellence take place. In addition to this neglect to provide handicraft skill the employers also instituted the plan of dividing and subdividing the work, whereby a man who formerly did two or three branches of a trade devoted himself only to one. The object of this was manifestly to increase the man's power of production, which, if it did not lower his general conception and capacity as a workman, certainly instituted a precariousness of employment which has been injurious and demoralising. The whole character of the employers has changed. From being actual workmen or experienced masters they generally have become capitalists, who conduct their works in too many instances without practical knowledge.

If in a few cases journeymen in some firms have had youths placed with them as apprentices, or under their charge to be taught their trades, it is scarcely ever made to the interest of the workman to teach the youth, who, on the completion of his term of probation (his employer in the meantime receiving all the advantage of his underpaid labour), will become a competitor in the labour market, and it cannot be wondered at if the "lad," under such circumstances, does not get a proper and systematic teaching. The deficiency of skilled workmen has, no doubt, induced employers to make a general demand for "technical education," as if that or, more properly speaking, "scientific instruction," could ever take the place of handicraft skill. It is yet to be learned whether the technical instruction as now given is calculated to improve the character of the work done, or simply to increase the man's power of production. This cry for "scientific instruction" for workmen as such is delusive, and, as at present carried out, will do little or nothing to supply well-skilled handicraftsmen, or, as I will call them, "manipulators of material."

It is obvious to me that the apprenticeship system has broken down under the method of work by "competitive contract," with the division and sub-division of labour under capitalistic employers, who have failed to take proper precautions for the production of industrial skill, and for this breakdown employers are generally and directly responsible. Another fact must always be kept in sight, and this is that in the practical work of everyday life workmen are not allowed to exercise what technical skill they possess; for, after attending a class over night, they will soon get their scientific notions scouted if they attempt to put them in practice on their job or in the workshop the next day. All that has been determined previously by the contract price, and every object is subordinated to the one of making the job pay.

Nearly the whole of the instruction given in existing art schools is worthless to the actual operative, and is greatly above his head, relating as it does to theories which the operative workman is never called upon to know or to exercise. It might be alleged that this instruction will, by giving him a wider and more comprehensive knowledge of the theories underlying his trade, fit him to take a higher position as clerk of works, surveyor, draughtsman, &c., &c. If this be so, it is a kind of instruction that cannot be called instruction for a workman; he has been simply lifted from the grade of a workman to another in the managing department, and is no longer an operative, nor has his instruction been useful to him as such. It should therefore be called an "instruction for the production of architects, draughtsmen, clerks of works, engineers, surveyors, &c."

As a test in point, I may say that about 12 years ago I went with some fellow-workmen, with the intention of forming a class at the West London School of Art, in Bolsover Street, which is, I believe, one of the best in the kingdom, and there we found that the subjects taught were not of the least practical value to us as house painters and decorators. The whole of the instruction was too elaborate and artistic, and meant a long course of study and practice, impossible and useless for us to try. Had we attempted it, we might at our time of life have become "mongrel artists," and have been spoiled as workmen. On my pointing this out to the head master, Mr.

\* From a paper by Mr. George Shipton, secretary of the Amalgamated Society of House Decorators and Painters, presented to the Royal Commission on Technical Education.



Stewart, who, by the way, was a practical house decorator as well as teacher, he was so impressed with my representation that he gave us a separate room apart from the regular school of art, in which we received two lessons per week, at the rate of 12s. each. One was given by himself upon the harmony of colour for practical house-painting and decorative purposes, treating of work which it would fall to the lot of the operative painter to execute; the other lesson was by the second master, afterwards, I believe, head master of the Leicester School of Art, in geometrical and freehand drawing. We were only taught, however, how to draw simple ornaments suitable for rooms where the expense of an artist was impossible, yet so well balanced and appropriate in form and colour that the room would be greatly and tastefully improved with very little additional expense. As the charge for these classes fell entirely upon us who attended them, and some members were called away to work in other parts, the cost became too heavy, and we had with deep regret to give them up, as the teaching was just what we required to improve us as practical workmen. Of course, if a workman has the ability or genius to become a good artist, let him by all means have every facility and encouragement; but let us insist on his being an efficient handicraftsman while he professes to be a workman. It is worse than absurd to expect that from any system of scientific instruction we can have a well-skilled workman, a good artist, general draughtsman, architect, and surveyor rolled into one for 9d. or 10d. per hour, which some people seem to expect.

With regard to what is desirable in such instruction as is given, I would submit the following points:—1. That neither the rules and regulations of the Science and Art Department, nor those of the City and Guilds of London Technical Institute, are adapted to the present requirements of skilled artisans and mechanics. 2. No scheme of technical instruction can be considered satisfactory unless provision is made for trade teaching in a workshop, combined with theoretical lectures relating to and based on the instruction given in the workshop. 3. It is unnecessary and unpractical to expect workmen to attend long courses of twenty-eight or thirty lectures, as at present required by the foregoing institutions. 4. Uncertainties or fluctuation of work cause about 50 per cent. of those who commence attending winter courses to drop off and fail to attend the final annual examinations, held about seven months from the commencement of the course. 5. Short courses of lectures (four to six) combined with trade practical teaching are better adapted to modern requirements and the fluctuations of trade. 6. So long as the system is continued by the State, the Government should, through the Science and Art Department, give greater assistance to practical technical schools or classes, and they should discourage the vast number of theoretical classes, held by science teachers without practical experience throughout the country. 7. The qualification of teachers in technical and science classes should be gained in a different manner; more regard should be paid to the actual experience of a teacher in his subjects, the present examinations enabling anyone to set up as teacher immediately on passing an examination. 8. There should be large central trade schools in populous neighbourhoods, and occasional courses of trade teaching, and lectures in suburban districts. 9. Geometry, freehand, and model drawing should be compulsory subjects for all trades in a school. 10. Trades classes should be conducted by skilled workmen. 11. Each trade school should have as director a person practically acquainted with the trade requirements, and with sufficient theoretical knowledge of science to give lectures on the principles underlying the workshop practice.

It is quite possible to carry out these foregoing principles, as I have seen some of them in operation at the Polytechnic Institute, where certainly the best kind of instruction, suitable to workmen while they profess to remain so, is given that I have witnessed or heard about. Employers should be held responsible in every way possible, to afford facilities for youths to be systematically taught for a given or fixed term, say of five years. I mean that they should take the boys and give a fixed term to them in their factories. This, if accompanied with the theoretical instruction in schools to which I have referred, would enable them to become as proficient in five years as they formerly did in seven, because, under the old system, the first one or two years of the youth's apprenticeship was spent in drudgery not much connected with learning his trade. This would allow of boys remaining at elementary schools until they were sixteen years of age, and if capable of being carried out, is highly desirable in our public and national interests.

I have only one other suggestion to make. From my experience employers also require instruction. If workmen use every effort to attain the highest degree of skill, employers and the public should allow them every opportunity of producing good work, otherwise it will be very discouraging to workpeople. To obviate this to some extent I would suggest that spaces be set apart in our museums and public palaces, in which should be exhibited various specimens of work produced by workmen, with their names and residences attached. These specimens could be arranged in classes or grades, beginning with the

plainest samples to the most elaborate. The public could view these specimens of work and would demand that their work should be as well done as these samples. Prizes might be offered for original and good productions of hand-skill, and this would stimulate the workman to excellence in his branch of industry. By thus bringing before the public the specimens of good work and bringing them face to face with the workmen, it would lead to inquiries which must result in good and in the production of better work. The employers have everything their own way, and make what representations to their customers they please, and by selfish conduct cause the frequent complaints urged by the public against workmen. Scamped or slop-work is demoralising to the workpeople, it is a fraud on the customer, and is injurious to the public interests. To prevent this as much as possible, whether on the part of employers or workpeople, should be the constant aim of a true Science and Art Department, and this would make it worthy of the nation and useful in sustaining our industrial prestige.

## BIRMINGHAM ARCHITECTURAL ASSOCIATION.

THE fifth ordinary meeting was held at Queen's College on Tuesday evening, February 17. The vice-president (Mr. W. H. Kendrick) delivered an address. He first of all dealt with the affairs of the association, and inferred that, judging from the present and increasing success of the classes, &c., the prosperity in the future was assured. The connection now existing between the London society and the one he was addressing was commended as serving to mutually strengthen each other for the promotion of the interests of the profession. The lecturer then gave his views upon the education of architects, and recommended the pupilage system supplemented by technical study, as by this method the vigorous individuality of British design would be sustained. He desired also a greater appreciation of the art workmen, and as a means for their improvement he desired the establishment of a technical museum in Birmingham. This would contain a competently-arranged collection of specimens of every period of architecture and sculpture. He contended if this were accomplished, that the art-work of the town would be raised in tone, and the workman, by the study of good examples, would be dissatisfied with his present meaningless productions.

On the proposition of Mr. H. H. McConnal, and supported by Messrs. R. B. Morgan and Victor Scruton (hon. sec.), a hearty vote of thanks was accorded to the lecturer.

## THE TOL-HOUSE, GREAT YARMOUTH.

SOME interesting discoveries have just been made at this curious building, so well known to antiquaries from its equally curious history, having been not only the usual place of assembly for the town, although not a town-hall, but the common prison as well. The fabric dates from the early part of the thirteenth century and has an external staircase leading to an open porch on the first floor, from which election and other addresses were delivered. The building was doomed to destruction not long since, but by a vigorous effort made by some of the townsmen and others, the decree was reversed, and the structure handed over to trustees to be devoted to some useful purpose. A subscription fund was opened and the work of repair was entrusted to the architects, Mr. Loftus Brock, F.S.A., of London, and Messrs. Bottle & Olley, of Yarmouth. During the stripping of the roughcast and cement which have covered the old walls for many years, a fine series of small moulded arches has been found below the windows of the open porch. These rest on corbels, and are of much beauty. Below these the Gothic arch which formerly gave light and air to the common hold, or prison, has also been found. All will be carefully repaired. The form of the old windows of the hall has also been recovered. The fine timber roof of the hall has been repaired and opened to view, and it is now proposed to fill the windows with heraldic glass containing the arms of the principal among the old local families.

## LEGAL.

Liverpool Assizes.—Feb. 17.

(Before MR. JUSTICE WILLS.)

HORNBLOWER & SONS v. HESKETH.

ARCHITECTS' FEES.

This was an action brought to recover certain sums of money for work done, and 1,250*l.* for commission. The amount charged for work done and 500*l.* towards commission had been



paid into court, leaving 750*l.* in dispute. The plaintiff was Mr. Frederick W. Hornblower, carrying on business as an architect in Liverpool, under the style of Lewis Hornblower & Sons, and the defendant was Sir Thomas Hesketh, Bart. The claim was made in respect of plans for what would have practically been the rebuilding of Rufford new hall, and the amount was calculated at the rate of 2½ per cent. The building in question was not the picturesque old hall of Rufford which is seen by passengers on the railway, but the new mansion which, even according to its owner, has a "barrack-like aspect." Sir Thomas Hesketh contemplated important alterations on the new hall, and employed the plaintiff to prepare the plans, which included not only an ornamental exterior, but also a grand staircase and details of oak carving for the suite of reception rooms. Sir Thomas also required a racket court, American bowling alley, and an estate office. The plaintiff prepared tracings, plans, and bills of quantities; but in the summer of 1882 the defendant, who was then in America, changed his mind as to the restoration of Rufford Hall, and resolved, at the desire of Lady Hesketh, to alter another house at Easton Neston, in Northamptonshire. The work occupied plaintiff and his assistants for two years. It was averred that the plans had been seen and approved by the defendant. The estimated cost of carrying out the proposed improvements was 50,000*l.*, and upon this sum the commission was claimed at 2½ per cent., which was said to be the regular professional remuneration for plans and designs when the work was not carried out. The plans which had been prepared were produced by the plaintiff. It was alleged for the defence that the defendant never contemplated such a large expenditure as 50,000*l.*; that plans relating to that amount had not been authorised by him, and that 20,000*l.* was the outside figure to which he would go. The plaintiff in his examination said, however, that no limit had been mentioned. When his evidence was completed a consultation took place between the parties, and a verdict was then entered by consent for the plaintiff for 300*l.* in addition to the 500*l.* which had been previously paid into court, Sir Thomas Hesketh admitting the merit and value of Mr. Hornblower's work, and Mr. Hornblower admitting that the cost had proved to be more than Sir Thomas Hesketh had anticipated.

### GENERAL.

**Mr. Holman Hunt's** *Flight into Egypt*, of which there are two pictures, will shortly be exhibited in London.

**Mr. White** is now exhibiting in Glasgow his three pictures—*Her First Dance*, by Mr. W. Q. Orchardson, R.A., and *The Stowaway* and *A Waif*, by Mr. J. E. Millais, R.A. They were lately seen in his gallery in King Street.

**The Scottish Royal Academy Exhibition** opened on Saturday. Following a practice of the two past years, the sales of pictures will not be published.

**Messrs. Braun** have taken a photograph of Terburg's *Convocation of Munster*, the small picture crowded with portraits which was purchased by Sir Richard Wallace for 7,000*l.* and presented to the National Gallery.

**The Fawcett Memorial** at Salisbury is to consist of a bronze statue in the market-place, the total cost of which will be about 1,000*l.* Up to the present the subscriptions received and promised amount to 800*l.*

**Mr. Hutchison, R.S.A.**, has completed a marble bust of the late Dr. W. Lindsay Alexander. It will be placed in a wall niche at the Augustine Church, Edinburgh.

**M. David d'Angers**, the son of the celebrated sculptor, intends to present the series of medallions modelled by his father to the French Government. They will probably be deposited in the Louvre.

**Mr. Joseph Clarke, F.S.A.**, has been appointed architect to the Charity and Endowed Schools Commissioners.

**Scottish Society of Water-Colour Painters.**—At a meeting of this society, held in Edinburgh on the 13th inst., the following Associates were elected members of the society, viz.:—Mr. Thomas Scott, Edinburgh; Mr. Duncan Mackellar, Glasgow; Mr. David Farquharson, A.R.S.A., Edinburgh; and Mr. A. S. Boyd, Glasgow. The following candidates were elected Associates, viz.:—Mr. Arthur Melville, Edinburgh; Mr. D. McGregor Wilson, Glasgow; Mr. W. Macgregor, Glasgow; Mr. James Macmaster, Glasgow; Mr. John Carlaw, Glasgow; Miss Shield, Edinburgh.

**The Trustees** of the British Museum having brought the subject of the opening of the Natural History Museum on Sunday afternoons under the notice of the Government, it has been decided not to provide the funds which are required for the purpose. The Council of the Institute of Painters in Water-Colours have arranged to open their exhibition free to the Sunday Society on February 22 and March 1.

**A Monument to Cardinal Mezzofanti**, by Bonola, has been completed for erection in Rome near Tasso's monument.

**Mr. Alfred Darbyshire** on Sunday delivered a popular lecture on architecture at Ancoats, in which the distinguishing features of the principal styles were pointed out, and it was shown how each style was developed. There was nothing, he considered, in the whole history of art so beautiful, so truthful, and so majestic as the Gothic cathedral. It was full of a mysterious atmosphere, and the slender shafts ending in the vaulted roof seemed to carry the soul to heaven.

**Mr. F. Robinson**, of Blackburn, has been appointed architect for the new schools of St. Michael in that town. The second place in the competition was obtained by Mr. J. W. Shurrock, and the third by Messrs. Stones & Gradwell.

**Mr. Charles Dixon** has been appointed a demonstrator of mechanism and applied mechanics at Cambridge, in the place of Mr. J. H. Nicholls, B.A., who has resigned.

**The St. Lazare Station** in Paris, which is the terminus of the line from Dieppe, is about to be enlarged, the Minister of Public Works having approved of the arrangement between the company and the municipal authorities of Paris.

**Mr. William Landless**, architect, of Glasgow, has entered into partnership with Mr. H. E. Clifford, also of Glasgow, and the business will be carried on at Mr. Landless's office, in West George Street.

**Mr. J. H. Morton**, of South Shields, is preparing plans for a proposed higher-grade school at the Grange, for the Jarrow School Board.

**The Metropolitan Public Garden Association** have contributed 100*l.* to the Lambeth and Westminster Districts towards the cost of planting trees in the public thoroughfares and providing ornamental seats.

**A School Chapel**, erected from the plans of Messrs. Douglas & Fordham, of Chester, was opened at Holywell on Tuesday. It will seat about three hundred people.

**An Industrial Exhibition** will be held from July to November next in the Palais de l'Industrie, Paris. It will embrace three foreign sections, devoted respectively to England, Belgium, and Italy, with the view of showing side by side the processes of manufacture followed by each country. M. Ducret, President of the Chamber of Syndics, Paris, has charge of the arrangements.

**Messrs. Perry & Co.** announce their annual writing and drawing competition. Prizes are offered of the value of twenty pounds, ten pounds, and several other sums for the best pen-and-ink drawing. The drawings are to be 6 inches by 9 inches. Particulars may be obtained on application by letter to Messrs. Perry & Co., Holborn Viaduct, E.C.

**Messrs. Clark & Moscrop**, of Darlington, have received instructions to prepare plans for laying-out the new cemetery at Richmond (Yorks.), and erection of chapel and lodge.

**The St. Petersburg Ship Canal** has been completed, and ships of large tonnage can sail direct to the port of St. Petersburg, without, as heretofore, undergoing transshipment of goods at Cronstadt. The canal, which is 26½ versts in length (1 verst = 5½ furlongs), runs from the Island of Goutouiew, in the Neva, to the Cronstadt roads, and has an average depth of 22 feet, and a portion of the Neva has also been dredged to the same depth.

**The Vestrymen of St. James's, Westminster**, have proposed to replace the lamps at the Guards' Memorial with lamps of modern construction. The scheme has not been sanctioned by the Commissioners of Works, who have pointed out that the lamps were designed in connection with the monument.

**Glasgow Philosophical Society.**—A meeting was held on Monday of the architectural section of the Glasgow Philosophical Society. Mr. Landless presided. Mr. R. A. McGilvary read a paper on "Plasterwork." He confined himself to the plain branches, and said he hoped at some future time to say something of the ornamental branches. Mr. Henry Morrison subsequently read a paper on "Slates." He traced the growth of slate rock, and pointed out the localities of the principal slate ranges in this country. He also referred to some of the more important slate quarries, to slates as a covering for roofs and as articles of commerce.

**We understand** that the Wilkes' Metallic Flooring Company, of 17 Devonshire Square, E.C. (to whom was awarded the only gold medal for paving at the International Health Exhibition held at South Kensington last year), have received instructions to pave the Old London Street at the International Inventions Exhibition.

**Messrs. Perry & Co., Limited**, of Birmingham and Holborn Viaduct, have just declared a dividend of 10 per cent. for the year 1884, and have carried a sum of 3,000*l.* to the reserve fund, as against 2,000*l.* for the preceding year. The auditors were Messrs. Quilter, Ball & Co.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, FEBRUARY 21, 1885.

## GOLBOURNE CATHEDRAL, NEW SOUTH WALES.

MESSRS. HEATON, BUTLER & BAYNE, of Garrick Street, London, have just shipped two large stained glass windows for Goulbourne Cathedral, one for the east of chancel the other north transept. The east window consists of seven long lights and elaborate tracery in the Decorative style, and is filled with figure work, very richly coloured, illustrating *The Angel's Appearance to the Shepherds, Christ as a Child in the Temple, Baptism, Sermon on the Mount, Crucifixion, and Ascension*. In the numerous pieces of tracery above the lights are emblems and Christian symbols. The following inscription is inserted at the base of the window:—"Erected in memory of William Bradley, born 1800, died 1868; and of Emily Elizabeth, his wife, born 1812, died 1848; by their daughters Emily Jane Pearse, Kate Heard, Minna Bradley-Robinson, and Alice Caroline Roberts, 1885." The north transept window, consisting of six lights and tracery, contains eighteen figure panels from Old Testament history, which subjects are arranged in bands of colour across the window, having pattern work between. The inscription on this window reads as follows:—"To the glory of God and in loving memory of Thomas Sutcliffe Mort, who entered into rest the 9th day of May, 1878." This window was executed under the supervision of Mr. J. D. Crace, of Wigmore Street, on behalf of the Mort family. The Bishop of Goulbourne has taken considerable interest in the work, both in placing out and selecting the subjects of the window. The above works were executed at a cost of 1,000*l*.

## THE RAILWAY RATES BILLS.

A PETITION to be presented to Parliament against the new Railway Rates Bills has been drawn up by the British Iron Trade Association, and it has received the support of other influential associations connected with the iron and steel industries. It says that (1) the Bills propose to charge undefined sums in addition to the maximum rates for the cost of and expenses incurred at stations, thereby introducing a principle at variance with the uniform practice of Parliament in fixing maximum rates, and imposing upon traders an unjustifiable expense in litigation in order to ascertain the amount legally chargeable for the conveyance of minerals, goods, and cattle, and practically rendering the maximum rates useless, and no longer a protection to the public using the railways; (2) that the Bills propose to increase the maximum rates on almost every article specified in the several Acts, including all kinds of iron and iron-making materials, upon the faith of which the powers granted to the several companies have been conferred by Parliament, and contain also numerous provisions of an injurious and objectionable character; (3) that the attempts of the companies so to add to the burdens of agriculture and trade are unwarrantable, and a violation of the public

faith in the Acts of the several companies, in reliance upon which numerous works have been built and vast expenditure incurred by traders and others; and that, if the said Bills pass into law, new burdens will be imposed upon the industry and agriculture of the country, with consequences disastrous to their welfare.

## MORTGAGEES AND JERRY BUILDERS.

IN August 1882 proceedings were taken by Mr. A. Payne, the district surveyor of East Hackney (south), against a builder, who was fined 3*l*. and costs for not using proper mortar. As he made no alteration to the structures, the Metropolitan Board of Works proceeded still further against him, and the magistrate made an order that the houses should be taken down. The defendant then appealed to the High Court of Justice, having in the meantime mortgaged the property. The magistrate's ruling, however, was confirmed, and judgment was given for the Board, and after great delay, by an arrangement with the mortgagees, all the parts built with bad mortar have been taken down. In the interest of the public, there is no doubt that houses built with bad mortar should be levelled to the ground. It is to be regretted, however, that under the present system of building the mortgagees may in such cases chiefly suffer, while the builder, who certainly deserves punishment, escapes practically free. But it is also true that there are other cases in which the builder is a mere dummy to shield some real owner, who carefully keeps his name and ownership out of sight so as to escape the penalties of the Building Acts.

## BUILDERS' RISKS.

AN action was lately heard in the Edinburgh Sheriff Court, in which a provision merchant sought to recover 200*l*. from Messrs. William Beattie & Sons, builders, Edinburgh, for damages which, he alleged, resulted to his stock and to his business through the dampness of the above premises erected by the defenders. The shop belonged to the northmost tenement in the street, and, according to plaintiff, the dampness was due to the exposure of the gable to the weather. Messrs. Beattie denied and explained a number of the plaintiff's allegations, and stated, among other things, that he, instead of waiting until the premises got seasoned, insisted upon entering them immediately after they were finished, and before the plaster had had time to dry. Any damp, they contended, was only such as was incidental to new premises, or, at all events, was quite trifling. The Judge found that the premises in question during the whole or part of the time they were occupied by the plaintiff were untenable by reason of excessive damp, and unfit for occupation as a grocer's shop, and that, in consequence of the condition of the premises, which the defendants failed to remedy, notwithstanding complaints made to them, the plaintiff suffered damage to the extent at least of 20*l*. For this sum Messrs. Beattie were declared, together with costs,

## NATURAL VENTILATION.

AS most of our readers are aware, the main agents which tend to make, or mar, all systems of "automatic"—or more properly "natural"—ventilation are the wind, the law of "diffusion of gases," and the movements generated by particles of air at different temperatures. We think it will be denied by few that any "system" of ventilation if it is to succeed must be carried out in strict accordance with the natural laws which everyday phenomena illustrate. In all schemes for efficient ventilation, the engineer is confronted by stern facts and not by theories. "The building has certain definite dimensions," "It is to accommodate a given number of people for a certain space of time," "So much gas, or other illuminating agent, is to be employed." The engineer, if he be up to his work, will know exactly how much fresh air to supply, through what sized apertures, and where to introduce it, guarding against draught, and so forth. Having made up his mind as to the requisite supply of fresh air, he will, if wise, turn his attention to getting rid of the vitiated air. He will calculate to an exactitude the rate at which supply and removal are to be permitted, in accordance with the laws which govern the natural movements of the atmosphere.

In ancient times it was a common custom, especially in the East, to fix tubes (not unlike our "bell-mouth" ventilators) on the roofs of buildings, and to cause the wind to blow down these shafts, and diffuse throughout the house, finding exit as best it could. Now, however, *nous avons changé tout cela*, and we make use of ventilators to extract the air which has become vitiated. Few will deny the usefulness of exhaust ventilators in stimulating natural ventilation currents. Speaking broadly, there are two main groups into which schemes of ventilation may be divided.

1. Those schemes in which the exigencies of the case demand that both the vitiated air be extracted and the fresh air be supplied from a level higher than the space to be ventilated (*e.g.* on ship-board, railway tunnels, house drains).

2. Those schemes in which the vitiated air is extracted from "ceiling level" and the fresh air admitted at the ordinary level (*e.g.* schemes for church, hall, or room ventilation).

For some years past Mr. Sampson Low, B.A., F.R.Met.Soc., has been engaged in perfecting schemes of ventilation to meet the requirements which almost any and every combination of circumstances could demand. For the requirements of ship ventilation Mr. Low employs two sets of shafts—downcast and upcast. The downcast shafts are each fitted with his patent "Hermes Crown Injector," which may be described as follows:—

"The ventilator consists of a shaft surmounted by a dome. The dome is connected to the shaft by means of 'baffle plates,' which divide the space between shaft and dome into equal compartments. Beneath the dome is fixed a 'wind guide' (which surrounds the shaft as a collar, and is attached to both shaft and 'dome') for conducting the air into the



dome, whence, owing to accumulated pressure, the current passes in the direction in which there is least resistance, *i.e.* down the shaft, and so on to the compartment to be ventilated. At first sight it might appear that the air could only enter from one side of the ventilator, namely, that against which the wind impinges; such, however, is not the case, as the air, pressed by accumulated pressure down one side of the ventilating shaft, induces a current in the same direction over the whole area of the pipe, whence it is led by branch pipes to various parts of the space to be ventilated."

The extracting system commences by small ducts in each of the compartments to be ventilated. These ducts terminate in a main exhaust shaft, whose sectional area is greater than the sum of the sectional *areae* of the tributaries. This main exhaust shaft is fitted with the "Hermes Crown Ejector," of which the following is a brief description:—

"This ventilator consists of three essential parts: (1) the shaft, to which is fixed (2) a dome-shaped chamber or 'wind-chest,' and (3) a 'cap,' which surmounts the whole structure. From whatever direction the wind strikes the dome, its upward curves cause the current to pass across the orifice in the dome, thus inducing a current at right angles to itself up the shaft, and so extracting the foul air from the drain below. If the wind strikes down vertically on the top of the ventilator, the downward curves of the 'cap' deflect the current, causing it to rush down the outside of the ventilator, past the space between the cap and dome; this vertical current induces a draught at right angles to its own path (*i.e.* horizontally between the cap and dome, and so over the extracting orifice of the ventilator), which, in its turn, creates an exhaust current vertically up the shaft of the ventilator, and so extracts the foul air."

Both these ventilators fulfil the essential requirements of yacht and ship ventilation, being impervious to water while allowing free passage to air. That they have found favour with eminent sanitarians, shipbuilders, and shipowners is abundantly proved by the following considerations:—The ventilators have been

adopted by H.M. Government, the Russian, Dutch, and Queensland Governments, and by many British and foreign shipowners, who speak very highly of the efficiency of the ventilators. Mr. Low's scheme for tunnel ventilation, and also his system of sanitation, space does not allow of our describing. We will merely say both are thoroughly scientific, and full particulars may be obtained at the establishment of Messrs. Sharp & Co., 11 Holborn Circus, London, E.C.

When we come to consider Group II. (of which schemes for the ventilation of churches and public buildings may be taken as typical examples), the chief difficulties to be encountered are, we think, popular prejudice to the appearance of exhaust ventilators on the roof, and difficulty of bringing in the fresh air in such a volume and at such a temperature as to be almost, if not quite, imperceptible to the senses. As far as the objection of unsightliness of exhaust ventilators on the roof of a church is concerned, we think Messrs. Sharp at once disarm criticism, for they have succeeded in bringing out some handsome designs of Mr. Low's patent without in any way interfering with the efficiency of the apparatus.

With regard to the admission of fresh air, and the temperature of the incoming current, very often the ventilating engineer is not consulted till all heating apparatus has been fixed, and it then remains only to adopt contrivances to the existing arrangements. Existing arrangements is an inclusive term, and there are perhaps a dozen or more special appliances which could be used with each combination of existing arrangements; so, taking all things into consideration, we will not discuss this point.

and architects willing to compete are invited to send their names and addresses to Mr. A. Young, 97 Wellington Street, Glasgow. The competition will be limited to ten architects to be selected.

WOLSTANTON.—March 2.—Plans are required for School and Caretaker's House. Mr. Henry Farmer, School Board Offices, Tunstall.

### CONTRACTS OPEN.

ABINGTON.—Feb. 27.—For Supplying Pair of Lock Gates. Messrs. George Siddons & Sons, Surveyors, Oundle.

BASINGSTOKE.—Feb. 23.—For Laying Water Services. Mr. H. Budden, Borough Surveyor, Basingstoke.

BELFAST.—March 3.—For Building Congregational Hall, Rosemary Street. Mr. W. J. Fennell, Architect, 11 Chichester Street, Belfast.

BELFAST.—March 14.—For Widening Queen's Bridge. Mr. J. C. Bretland, Borough Surveyor, Town Hall, Belfast.

BIGGAR.—Feb. 24.—For Supply of Cast-iron Pipes (11,630 yards): Mr. L. Murray, Surveyor, Biggar.

BIRKENHEAD.—Feb. 24.—For Supply of Three Iron pontoons. Mr. A. Gill, Town Clerk, Municipal Offices, Birkenhead.

BIRKENSHAW.—Feb. 25.—For Tanks, Pit, Filter, Lime-house, Boundary Walls, and Works in connection with the Drainage. Mr. W. Crutchley, C.E., Town Hall Chambers, Wakefield.

BIRMINGHAM.—For Building Chapel at Smethwick. Mr. J. H. Burton, Architect, Warrington Street, Ashton-under-Lyne.

BLACKBURN.—Feb. 23.—For Building Stables. Mr. J. H. Stafford, Secretary, Hunt's Bank, Manchester.

BRISTOL.—Feb. 23.—For Building Lodge at St. Agnes Park. Mr. C. F. Hanson, Architect, Clifton.

BURNLEY.—For Building Public Assembly Rooms, Houses, and Shops, St. James's Street.

### COMPETITIONS OPEN.

COLCHESTER.—March 25.—Designs are required for Remodelling and part Rebuilding the Cups Hotel. Mr. H. H. Elwes, Secretary, Exchange and Cups Hotel Company, Colchester.

GLASGOW.—Feb. 28.—Plans are required for the Erection of District Asylum at Hartwood,

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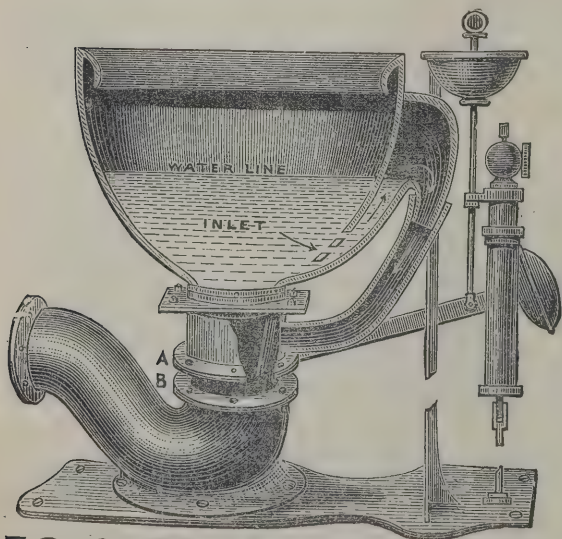
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# The Architect.

## THE WEEK.

It was at one time proposed to erect a new building for the British Embassy in Berlin, but it is now arranged to purchase the building which had been used for the purpose. A new building was estimated to cost 50,000*l.*, but on the score of economy alone, it is supposed to be preferable to pay a sum of 72,000*l.* for the old embassy house and furniture. According to the explanation of the Chancellor of the Exchequer, a house that is expected to cost 40,000*l.* is sure to amount to 60,000*l.* By that ratio the new house at Berlin would run up to 75,000*l.*, and there was the cost of furniture to be added. As the buildings abroad are all undertaken by the surveyors of the Office of Works, Mr. CHILDERS's explanation is not likely to be read with gratification in Whitehall Place.

MESSRS. CHRISTIE will next week submit to public competition a large and interesting collection of the works of the late Mr. HARRY JOHNSON, whose sudden and lamented death took place on the last day of the past year. Mr. JOHNSON travelled and painted with the late WILLIAM MÜLLER in his journey through Lycia. He subsequently visited Greece, Spain, and Italy, and the present collection is rich in the varied results of his labours. Mr. JOHNSON produced many remarkable oil pictures, but latterly worked principally in that style of pure water-colour which is so peculiar a characteristic of the English school.

THE committee of the Liverpool Art Club announce that they propose to hold an exhibition of works of art by amateurs, comprising oil and water-colour paintings, drawings in black and white, wood carvings and modelling. Medals will be awarded to the most deserving works. The exhibition will be opened on Monday evening, April 27, and exhibitors are requested to send in their works not later than Monday evening, April 13. The competition is open to all amateurs, whether members of the club and residing in Liverpool or not. The regulations may be had from Mr. HENRY E. RENSBURG, the hon. secretary of the art club.

ACCORDING to the new return of the Metropolitan Board of Works, the rateable annual value of the metropolis for the present year is 28,920,537*l.* The valuation of the City of London, which amounts to 3,545,368*l.*, is included in that sum. The parishes of which the valuation runs to seven figures are St. Mary Abbott's, Kensington; St. George's, Hanover Square; St. Mary, Islington; St. Pancras, St. Marylebone, Lambeth, Wandsworth, and Paddington.

A DECISION of the Court of Appeal on the subject of underpinning, if acted upon generally, would have important consequences on the question of the easement of support. The legal maxim is that land has an indefinite extent upwards and downwards, but the Metropolitan District Railway Company, having constructed a part of their concrete wall under stables in Whitechapel without the owners' permission, and the Court of Appeal having approved of what was done, the old maxim is no longer of universal extent. The case is a very curious one. A clause in the Company's Act for extensions authorises the underpinning or otherwise strengthening of houses within 100 feet of the railway, compensation being paid for any inconvenience or damage which might arise. The Company required the ground on which stood stables, which were at the back of premises in Whitechapel, for making their extension, but the owner declined to sell a part of his premises. The Company then slightly changed the direction of the line, so as to just clear the stables. A concrete wall was constructed under the stables, which was an encroachment on

the owners' property, and it was made a counterfort to a retaining wall on the railway side, which was only 9 inches thick. Was the mass of concrete under the stable to be considered a work of underpinning or a part of a retaining wall? Mr. Justice CHITTY held that it was the latter, and therefore illegal. The Court of Appeal, on the contrary, decided that it was underpinning. It was admitted by the Lords Justices that, in underpinning, what is sought is vertical support; while in Whitechapel it was evident that lateral support was also given. But that was regarded as an accidental result; and the fact that the Company derived benefit from a kind of work that was intended to serve another purpose was treated as "a windfall." The decision means that a wall can be looked at in several ways, and can be supposed to subserve several uses, and that is a novelty in the courts.

THE Committee of Management of the proposed new Training College at Norwich, with the assistance of their assessor, Mr. EWAN CHRISTIAN, have provisionally accepted the design of Messrs. OLIVER & LEESON, of Newcastle-on-Tyne, architects, but subject to certain modifications in respect of arrangement and to conditions as to verification of estimate. They beg to thank the other architects from whom they have received plans for the trouble they have taken in preparing their designs.

THE house in High Street, Hampstead, which was for a long period occupied by CLARKSON STANFIELD, R.A., was on Wednesday evening opened as a public library and literary institution. This is making a worthy use of the building, and the directors can preserve the associations by adorning the walls with a series of engravings from STANFIELD's pictures. The library has been for the last fifty years supported by many of the notabilities who have selected Hampstead as a place of residence.

It is proposed to erect at Cannes a chapel in memory of the late Duke of ALBANY, on a site given by Mr. SAVILE, adjoining the Villa Nevada, in which His Royal Highness died. The site was chosen by His Royal Highness the Prince of WALES during his recent visit. Plans have been supplied by Mr. A. HEWETSON, architect. Messrs. TAYLOR & RIDDETT, bankers, Cannes, and Messrs. COURTTS & Co., London, have consented to receive subscriptions. The church will be dedicated to St. GEORGE, the patron saint of England.

IN the Supplementary Civil Service Estimate, which was published this week, a sum of 83,520*l.* was entered for the National Gallery, and it was said that a saving of 3,980*l.* was anticipated on the sums of 70,000*l.* and 17,500*l.* paid respectively for the *Ansdei Madonna* of RAPHAEL and VANDYKE's equestrian portrait of *Charles I.* When in June of last year an estimate of the value of the two pictures was given by Sir F. W. BURTON, the Director of the National Gallery, the sums put down for them were 110,000*l.* and 30,000*l.*, and at the time a still larger sum was demanded by the Duke of MARLBOROUGH. In July 1884 the price of the pictures, according to His Grace's agent, was 160,000 guineas. It will thus be seen that the Treasury has brought down the cost to less than one-half of what was supposed to be obtainable seven months ago.

THE increase in the value of house property in Paris is exemplified in the sale of the houses on the Quai Malaquais, which have been just purchased by the State for additions to the Ecole des Beaux-Arts. In 1823 the houses were sold for 750,500 frs. The price paid by the Minister of Public Instruction has been 4,200,000 frs., or in about sixty years the price has been raised six times higher. It is also to be remembered that in the late sale all fixtures of any importance have been excluded. The value of the site is about 840 frs. a mètre. The position is far from being aristocratic, and is, moreover, one of the last that would be selected by any man but a bookseller for a shop.



## ARTISTS AND CRITICS.

IT would seem as if Mr. WHISTLER's ambition was to be able to give occasional surprises to the public. He knows that novelty is a quality which is much esteemed in London, and by providing it he has often deserved such gratitude as a certain class of people can bestow. The lecture which was given on Friday night in last week was the latest of the surprises. It was believed that Mr. WHISTLER could do a great many clever things, but as his patrons are not much given to reasoning, it was not anticipated that the artist could compose and deliver a most captivating address. The effect of it was heightened by the use that was made of time as an accessory. Lectures are common enough in London, but to hear a lecturer commence at ten o'clock at night is one of those remarkable events which society treasures. A delicate compliment had been offered, and was appreciated as it deserved. It mattered little what was said, the Hour and the Man were the attractions. To the artist's friends there was nothing extraordinary about the affair. They were aware that when he is in the mood Mr. WHISTLER can talk of art in a way that would make the fortune of an Academy professor, and that his occasional remarks exhibit a subtlety which corresponds with what is seen in his etchings.

A work of Mr. WHISTLER's would be nothing if not original, and the disregard of conventional rules in the Piccadilly lecture was enough to make the great BLAIR send an angry remonstrance from Elysium. Recognition was, however, made of a fashion that is now quite common among lecturing folks in going back to prehistoric ages. It was delightful to hear the rebuker of those prosy archaeologists who seek for knowledge in museums and crypts instead of allowing their fancy full play, unfolding his researches among primitive peoples. But it would be too great a shock to a fashionable company to allude to the cave-dwellers, who were in the habit of scratching portraits on the bones which they had just gnawed, and accordingly Mr. WHISTLER gracefully began with the tent period. If it is not more definite than other men's starting-points, it had the advantage of suggesting to young ladies a happy time when the world went a-gipsying. We are henceforth to suppose that on one of those days, when the tent-dwellers had gone forth to their respective, if not respectable, avocations, a certain light and airy savage remained behind "with the women," and inspiration having come to him he produced a symphony for them by means of a gourd and the piece of stick which served for a poker. He traced strange devices just as readily as if he possessed a plate and a needle. When those who went forth returned no objection was raised about the fellow's idleness and his spoiling a gourd. They were as much charmed as if they had been in the habit of paying shillings to Bond Street Galleries. The biting of lines in gourds became popular, and it was found pleasanter to pass away the time in art work than to run the chance of being knocked on the head by Philistines whose gourds remained as Nature made them. When the gourds were exhausted there was a likelihood that the artists would have to "go forth," but inspiration came once more to their aid. They took lumps of clay and made them into gourds, and their descendants might have been employed to this day in the same manner (or at least until the clay was exhausted) if it had not been discovered that Nature was slovenly in her contours, and that art-pottery, which might be more worthy of bearing the strange devices than a gourd, was indispensable. Beautiful vases forthwith came into existence, and they were the forerunners of couches, and tables, and knicknackeries, for which room was found in a tent with as much ease as additional families are accommodated in seaside lodging-houses.

Happy would it have been for the world if it went on so harmoniously, but in course of time art-enemies arose whose wickedness was displayed in producing the strange devices at a cheap rate. The gourds were no longer considered as masterpieces, to which one might hope to live up, but as materials for "squash." The artist's occupation went forth never, perhaps, to return, and in place of it appeared the craft of the manufacturer, the huckster, the critic, the middleman, the preacher, the archaeologist, and the unattached writer. Nevertheless, Mr. WHISTLER was

not without a little hope that the gods would send an artist occasionally to enjoy himself at the river side, and to accompany the morning in its early walks.

Mr. WHISTLER may appear to be freakish, but just as he has a reason for the slightest touch of colour he puts on a canvas, so there is a theory in his lecture for which much can be said. It is the relation between the artist and the public, or rather such among the latter as assume the office of criticism. If we understand his allegory, it has been Mr. WHISTLER's desire to suggest that the artist is an inspired being, and should be respected accordingly. We have authority that is not to be questioned for the belief that the Gentiles "are a law unto themselves." May we not without irreverence apply it, and say that the artist is a law unto himself? When an artist—call him painter, sculptor, architect, poet, or dramatist—expends his thought on a work, is it not reasonable to suppose that he has produced something which is the result of definite laws, although everybody may not be able to trace their influence? The poem or the building will have unity if it be the expression of its creator's thought at the time; but it is absurd to suppose that a critic will in all cases be able to follow the thought by a glance. The artist himself is not always able to recall the motives under which he acted in producing his work. He is compelled to let it speak for itself. GOLDSMITH could not explain the meaning in which the word "slow" is to be taken in the first line of "The Traveller," and, in consequence, it was supposed that he was only part author of the poem. But readers who have no need to make capital out of imaginary defects have found no difficulty in the interpretation of the word. Another word could not be substituted for it without injury to the poem. The experiment has been tried by BENTLEY and a second critic to amend the greatest poem in the English language; but what they have perpetrated has shown that they were unable to comprehend the poetry of "Paradise Lost." SCOTT proposed to add a verse to one of BURNS's songs, and produced most wretched doggerel. The amendment of a work in one of the fine arts offers even greater difficulty. In burning the lines on the gourd (to return to Mr. WHISTLER's allegory) the artist was far in advance of the men who afterwards stood around the vessel, and it will hardly be said that in our day the critics are wiser and more skilful than the artists they judge.

The conditions under which criticism is conducted at the present time are a sort of guarantee of imperfection. Apparently it is not considered necessary to devote much time to the work. The Royal Academy by its practice maintains that there is not the least difficulty in examining a couple of thousand of paintings, statues, drawings, etchings, designs, enamels, in a single day—for that is the time assigned officially to the critics. It is not to be wondered if the public, conductors of journals, and the critics come to the conclusion that the Academicians may be right, and that the most impartial criticism is that which is produced by going over works at the rate of three hundred an hour. Even with unrestricted time it is difficult to insure criticism of any worth, owing to impartiality being very rare. A writer who has practical knowledge of painting, sculpture, or architecture (and no others are qualified for critics) is likely to have a pet style which becomes a sort of standard and interferes with his justness of view. In spite of his knowledge and extreme honesty of purpose, Mr. RUSKIN would be called one-sided in his "Notes" on his exhibitions, and although no one would suppose that Mr. FERGUSON had anything to gain by an opinion, it would be believed with difficulty that he was an eligible assessor in a case where Gothic designs were opposed to Italian or Classic. Artists of all kinds are not to be regarded as safe judges of one another's works, and when they do condemn they are more unsparing than the bitterest newspaper critics.

But after all, what is the use of the best criticism? An error in a book is remediable by means of printer's types when the hour arrives for a second edition, but how many imperfections have been rectified in pictures, statues, and buildings after critics' eyes have grown tired in seeking for them? Gallons of ink have been expended in pointing out the imperfections of the pepper boxes at Trafalgar Square, but they still remain in their old positions for the amazement of foreigners. Living artists who exhibit at the Academy appear to be as obdurate as railway directors to



the suggestions which have been offered to them. Mr. WHISTLER has been condemned ever since his figure of a piano-player was hung in the Academy, and, in consequence, is one of the most popular of artists. The men who have suffered most by partial ignorance and flippant criticism are architects.

Criticism, good, bad, and indifferent, will however continue as long as it expresses with tolerable accuracy the opinions of the public in general. People also like to be spared the trouble of thinking, and it is not every one who has his history and science always at command, although he is sure to be an infallible judge of colour and form. It may be worth knowing that the grapes which are seen on the outside of a house are only to be found within vineries, that there is authority to show that a red feather in a cap should have been white, or that a coat should have a button less than is painted. But taking all things into account, we doubt if, with the exception of architects, criticism has done much to lessen the reputation to which an artist is entitled by his works.

## TECHNICAL EDUCATION.—II.

WE promised to return to the subject of technical education, and to explain the views of English manufacturers as they were brought before the Royal Commission. Men of that class have an interest in the subject which is much deeper than that taken by official people. They are veritable captains of industry, and, as such, have to sustain contests of a kind that could hardly be understood in a Government office. Home and foreign competition at the present time is no child's play, and we need not wonder if many manufacturers are convinced that for success they must depend on themselves, and that it would be an absurdity to look for aid from the Science and Art or any other Government Department. What has to be answered is, "How to do it," and there is a belief that the question is the one which has received the least attention among official persons.

The conclusions which have been arrived at on the subject by an important class among English manufacturers, cannot be expressed more tersely than in the words of Messrs. WILLIAM TONKS & SONS, of Birmingham. They say, "We believe the purely technical part of instruction may be acquired as well or better in our workshops," and, considering the standing of the firm as metal-workers, there will not be much difference among practical men on that point. Messrs. HAYWARD, TYLER & Co. may claim to be considered a representative firm in their line, and they give utterance to a similar opinion in different words when they write, "We do not find, nor do we think it is likely, that any such system of instruction can ever prove more than a useful adjunct to the system of apprenticing learners for at least three or five years. In our experience, it is only in this latter way that a practical knowledge of mechanics can be obtained." The managing director of a Nottingham company says, "The best technical knowledge is to be had in the workshop, and there is much truth in this for the majority. As to the technical schools abroad let us judge by results—Which is the most intelligent workman? Why, an Englishman or an American. And what countries produce the best machinery? Why, England and America." One of the large firms of cotton spinners corroborates this view, and points out that the most successful men in the business have been those who from early practical training became thoroughly acquainted with the machinery and material. They conclude by saying, "We do not think that any system of training would be at all equal to the practical knowledge acquired in a cotton factory, and more particularly if the student is impressed with the conviction that a successful livelihood or otherwise is to be the result of his efforts." Even more emphatic are Messrs. CLAY, of London, the printers, who say, "We find that the best workmen for our purpose are those brought up by ourselves, while others, even after their apprenticeship, are often quite unfit for any but the most ordinary work."

While it must be admitted that there is truth in the opinions we have just quoted, it may be objected that workshop or factory teaching has a tendency to empiricism. The best way to avoid that defect will be by the imitation of the plan which has been adopted at Sir WILLIAM ARM-

STRONG & Co.'s works at Elswick. Science classes have been established at the cost of the firm, and in them the humblest boy has the opportunity of learning the theory which he can see put in practice from day to day. In the first place there can be no misunderstanding about the nature of the instruction. It is imparted in the Elswick Mechanics' Institute, and consequently amateurism need not expect to be cultivated by its means. But the range of studies in the institute, if limited to those which are related to the business of the firm and district, is ample enough for a very high class of students. It comprises mathematics, geometrical and machine drawing, mechanics, physics, inorganic chemistry, manufacture of iron and steel, mechanical engineering, navigation and nautical astronomy, freehand drawing, and shorthand. The classes are under the immediate direction of Dr. EVERS, the author of several handbooks of science, who is aided by masters. The hours of attendance at the institute are from 7 P.M. to 9.15 P.M. on five evenings in every week of the session, and from 3.15 P.M. to 8 P.M. on Saturdays. Home lessons are likewise given, which require at least three hours' careful work in the course of a week, and the masters attend at appointed hours in order that they may be consulted by students who have experienced difficulties in their tasks. The fees are trifling in amount—indeed payment would appear to have been stipulated in order that the self-respect of the students might be never offended. Those who are engaged in the Elswick works pay 2s. 6d. as a registration fee for a single course, and 1s. 6d. extra for every additional course. The fees are double to those who are engaged elsewhere. "Premium apprentices" pay an additional fee of 1l., which, however, is returned to them after examinations. Their attendance is encouraged, as they are likely to be useful in keeping up a high standard. Free studentships are offered as rewards for any one engaged in the Elswick works who has attended a class regularly for two sessions and secured a first-class prize, and for all other students who have taken either three advanced first classes or a medal. Class books and drawing instruments are to be obtained by members at reduced prices. There is a general and reference library, which students who are not employed at Elswick can use by paying 1s. 6d. a quarter.

It is not surprising that two hundred and sixty students utilise the advantages which have been devised for their benefit by Sir WILLIAM ARMSTRONG'S firm. One hundred are from engineering works in the neighbourhood; the remainder belong to the Elswick works. The character of the instruction gives interest to the students' everyday toil, and it is found that, instead of becoming discontented, as happens elsewhere, "the students, who are most regular in their attendance and most earnest in their endeavours to benefit by the instruction, turn out to be the most efficient workmen." The foremen are selected from among them, and eventually they rise to higher positions. The drawing-office is recruited from apprentices attending classes. In fact, every student who is industrious, and who is possessed of natural or acquired ability, has a chance of gaining a position in the establishment, which, while advantageous in itself, is also a testimony of competency, and therefore (as the reputation of the Elswick works is world-wide) becomes a passport to a higher position elsewhere. The spirit in which the educational system is conducted cannot be better described than in the words of the partners by whom the classes have been established:—

It is our constant endeavour to make the classes as useful as possible, and we gladly avail ourselves of anything which experience teaches us will tend to this result. The tendency which is becoming more and more marked in the direction of increasing not only the difficulty of the examination in individual subjects, but also increasing the range of subjects in all competitive examination, is, we consider, an evil which should be carefully guarded against; for while offering a strong inducement to those who happen to possess exceptional powers of being crammed, it deters many who, although equally intelligent and equally gifted with all the qualities which combine to make the highest class of usefully intelligent men, are deterred from a feeling of inferiority in their powers of reception from entering into the competition. It does not always follow that those gifted with the power of absorbing a larger amount of information preparatory to an examination are the most practically useful in after-life; and, even were this the case, it is obvious that more general benefit will result from a larger



number of students thoroughly well grounded than a few brilliant ones obtained at the cost of deterring others from competing.

The extract contains advice which the Science and Art Department would do well to consider. There is a warning in it against the evil of that system of cramming which has already gained so much ascendancy in the schools as to become a power which "My Lords" must respect. Sir WILLIAM ARMSTRONG is not a man to allow his name to be attached to a document which has not been prepared with deliberation, and his remarks on the Department's teaching are in reality its condemnation.

One advantage of an experiment like that at Elswick is that there is a recognition of the condition of things in our time. Modern industry is an exemplification of the division of labour, and although some people may not admire that principle, they are compelled in spite of themselves to recognise it. The majority of those who are obliged to work are destined to take part in that division, and it is as well for them to accept the inevitable. It is only by doing so they can expect any advancement. They form so many units in a regiment of industry which must depend on united action for its existence. The description given by Paisley spinners of their business will, although not elegantly expressed, serve for a great many all over the country:—"Our manufacture is very much routine, and the workpeople occupying much the position of skilled labourers, without much opportunity of exercising their knowledge." The same idea was in Mr. WEDGWOOD'S mind when, in reply to a question from one of the Commissioners, he said, "All our working potters are piece-work men, or at least nine-tenths of them work piecework; and their work is so differentiated and so divided that I do not see how any other education than what such a workman gets in the seven years' apprenticeship could benefit him. A man makes plates all his lifetime from Monday morning to Saturday midday, simply laying a piece of clay in a mould, pressing it down, and taking it off again when dry enough to fettle. I do not see where any scientific education can be of service to him." There is as little use in blinking facts like these as in denying that rain falls for so many days in the course of a year in England. A system of technical education, to be of any use, must have a reference to the division of labour which controls the student's life. If he can in any way be aided to gain a step forward, so much the better, but it is not at all plain how this can be done unless there is an immediate connection between the school and workshop such as is found in Elswick. It seems to us that at the present time there is no experiment in education more worthy of attention than Sir WILLIAM ARMSTRONG'S.

We have no information about the cost of the Elswick classes, and probably it is only in exceptional cases that so much expense could be undergone. But we are convinced that at a great many places it would be possible for neighbouring firms to co-operate in a similar experiment. By a fortunate coincidence, as when Mr. SPARKES, of the Lambeth School, took up the subject of pottery, and Mr. RAWLE took up lace in Nottingham, it may be feasible to bring one of the Government schools into a practical relation with the local trade. In other places the experience has been different, and unless the local manufacturers insist on more than a nominal share in the management of the schools, what else is to be expected? The Stourbridge people declare that it is a farce to call their art school a school of design, and it appears that "the bulk of the most successful students of the school have been connected with the glass trade; but their success is to be attributed more to their own skill and industry and the genius and enterprise of their employers." In this case there is only one member of the committee who knows anything of the glass trade. The Department is too polite to offend the susceptibilities of the remainder, and, therefore, among all the examples which have been sent from South Kensington to Stourbridge there has not been one of any use to the glass decorator, unless MULREADY'S sketches are reckoned. The glass trade in other places is also in a position to cry out about the indifference of the authorities to its interest. When Sir CUNLIFFE OWEN was asked to explain how it was that foreign designers were employed by many of the most successful English firms, he pointed to glass as an example

of a trade which could flourish through native talent, adding, "The admirable glass made on a revival of old models by Messrs. POWELL, of Whitefriars, is, I think, traceable to South Kensington influence." But when we turn to Messrs. POWELL'S letter, we find that the students who seek employment with them as figure draughtsmen "have no practical knowledge of the art whatever, and are at a loss for some time in consequence. In their education all knowledge of the Gothic style seems to be ignored, and it is in this period of art that the grammar of stained glass must be learned." When it is found that Messrs. POWELL have to teach students the very grammar of their art, it is not easy to discern the boasted South Kensington influence. But in this, as in other cases, the authorities are not indisposed to look through the wrong end of the telescope on what has been the real training of students. The absence of special teaching, which was exemplified at Whitefriars, is so general that it may be considered one of the most marked characteristics of the schools. From all parts of the country letters came to the Commissioners pointing it out as if it were the principal defect. "The teaching wants to be more practical," Messrs. JONES & WILLIS write, "such as geometrical drawings, architectural plans, and section drawing from actual objects to different scales." "We think the instruction given in the science and art classes, in the subjects which concern our business—mechanical engineering—might," say Messrs. EASTON & ANDERSON, "be improved by being more practical." "Anything in the way of a practical gain," say Messrs. HORROCKS. "The encouragement of more practical teaching would," say CROSSES & WINKWORK, "very greatly influence and improve our manufactures." But truth becomes tiresome with iteration, and therefore we need not pursue this part of the subject.

The conclusion which may be drawn is that the country is at length wearied of a system of education which, while it professes to be practical, unfits the student for business. People ask that something "practical" should be substituted, and they are sanguine to suppose that it is merely necessary for a Government official to say the word and all must be done. But a remedy can only be found by means of a better organisation of employers. In many districts there are enough manufacturers to form a special school like the one at Elswick, and, until the trade jealousies are suspended and the management is made a local care as well as the foundation, technical education will remain what it is at present, an affair of masters rather than of students.

## THE DOULTON ART POTTERY.

IN the course of the examination of Mr. John Sparkes before the Royal Commission on Technical Instruction, the following evidence was given in respect of the pottery produced by Messrs. Doulton:—

Can you describe how the Lambeth art school took the peculiar bent of the instruction which is given there now?—Yes; a few months after I went to Lambeth in 1857 I had one student from the potteries, and I asked him to make some trials for me. I went to his master, but he was averse to doing anything. I then asked this man to give me clay and make certain trials for me in the kiln. By scratching the clay, by painting the clay with a stopping-out mixture, and dipping it afterwards in colour, and by making use of two or three clays, I saw there were capabilities in the material, but it was not for some years after that I was introduced to Mr. Doulton, and it was only in 1869 that we made some serious trials to get the clay decorated.

When you say "we," do you mean the school?—I mean Mr. Doulton and myself, and some of the students at the school at that time made some outlines, and they were rubbed in with cobalt and flux, and put through the kiln, and the result was encouraging. Then, for the International Exhibition of 1870, we made more trials; and soon the effort became more earnest still, and three or four students, a room being given them, went down to the pottery to manipulate the clay while it was wet from the wheel. I thought we could do more with it in that way. The result was that a great deal of attention was attracted by this attempt to decorate stoneware. Mr. Doulton was encouraged to take up the whole question, and from that time he provided rooms and a manager and all that was necessary to carry on the manufacture on a trade basis.

In his own works?—Yes, in his own works.

Do you consider that the work which is now being done at



Mr. Doulton's, and which has risen in the way that you have described, is altogether a new class of pottery, or is it simply a revival of something that has been done before?—In one sense it is a revival, because stoneware, which differs from every sort of pottery, was made in Germany in the fifteenth and sixteenth, and down to the eighteenth century; but, from another point of view, as to its decoration, we had to start upon entirely new lines, because the German pottery was fired with wood, and we were obliged to use coal, so that a piece of grey German pottery put through our kiln comes out the colour of a drain pipe. The colour of the Rhenish pottery is due to the fuel which is used.

Then you do not obtain the same colour as they obtain?—No, we were obliged to start on a new basis.

You had to do your ornamentation under those conditions?—I am speaking now of colours. The ornamentation was to a certain extent founded on the German, in this respect, that the old Germans could impress on to the pottery certain forms, such as you would get out of a seal, and that system we adopted, though we carefully avoided the German forms.

Then your designs are original?—Original, and never repeated.

You never do the same thing twice?—Unless it is a pair.

It follows from that, that you introduce a much larger variety of designs than those who repeat the same design upon a number of articles?—Yes, and my main object in making that stipulation was that we should keep the thing original and fresh, and avoid mechanical repetition of every kind, so that no piece is moulded; each piece is thrown and treated as an independent design.

Which involves this result, that both those who throw and those who decorate are to a certain extent artists, rather than artisans?—Yes.

I suppose it is correct to say that in the Lambeth school there is general art training precedent to the special training of the potter and decorator?—Yes, one of the conditions for a girl who enters the art pottery is, that she shall pass her second grade freehand examination at the art school or elsewhere.

That you consider indispensable?—Yes, certainly.

You do not think it possible to train a designer who shall not have previous knowledge and facility in the practice of art?—Of course it is possible to train designers, but in addition to their technical work, one would have to train their hands and eyes to drawing. I would also say that with regard to the girls who simply put on dots, and who colour, we take them from the national schools if they have passed their first grade examinations; but in many of those national schools they have also passed the second grade. If they have not done so they are sent to the art school to do it at once; and they get additional payment for each examination they pass.

You mean that they get additional pay in the factory?—Yes.

There is a strict alliance between the school and the factory therefore?—Yes.

What do you do for the works of Messrs. Doulton?—We take the girls, boys, men, and women, and give them this special training. The young girls who are engaged in dotting, or the lower forms of decorating stone ware, have a special teacher of elementary design; they are taught proportion, and the proper way of filling spaces, so as not to overcrowd, the value of diagonal lines, vertical lines, and so on, elementary design in short, and they do that every evening during the summer; while they are working in the art school at second grade subjects, they do it on two evenings a week. In this way a student may belong to both schools—the art school and the technical school. In the art school we do the work which is asked of us by this department; in the technical school we do that which is asked of us by the manufacturers.

Have you now described the whole of the work done by the technical school?—No, there is a class of higher design which is attended by the heads of rooms at the pottery and by the artists who paint and draw on the stoneware. That is carried on by Mr. Stannus. We assume that these persons can draw very well and design fairly, and then we tell them what not to do. The work is arranged in this way—on one day the teacher gives a lecture, for instance, on pottery and form, and shows that the form of a vase depends upon its proportions; that a vase designed for certain narrow proportions will not be good if it is simply drawn out; that a mere expansion of the thing will not do it, but that if it is this particular width it must have certain other lines in order to be harmonious. In the same way he would show what a moulding is, and how it would be decorated, and that is done, practically, with clay mouldings, which are then drawn on and dug out and decorated, and hung up in proper light and shade to show the value of the work. The students are taught the value and use of mouldings. Then proportion is dealt with from the architect's point of view, and the construction of ornament is carefully worked out. And so they get completely through the subject in the course of a year.

After pupils have passed through the second grade examination, for instance, and obtained employment in the factory, do

they continue their courses of instruction at the school?—They continue their courses for the most part at both schools, because the teaching is divided between the two. If a student wishes to go on with advanced anatomy or perspective, or architecture, he has to come to the art school; if he works at figure drawing or modelling or higher design, he has to go to the technical school. It sometimes happens that students do both.

You gave us certain figures just now; you mentioned that out of 250 working now in the art section of the works at Lambeth, all except some ten had passed through your school; what proportion of those remain in connection with the school after having graduated?—I cannot quite tell that.

A considerable proportion, should you say?—Very large.

More than half?—I should think 80 per cent.

Considerably more than half, at any rate?—Yes.

Do they remain permanently in the employ of the manufacturer?—Yes. There has been but one instance of a capable man having left. In the cases of those who go away, it is because their work is not good enough.

Can you tell us the exact number of workmen that come to study in the South Kensington Museum?—That is a very difficult question to answer. The number of visitors is very large.

I do not speak of the millions of visitors. I want to know the number of absolute workmen who come to South Kensington for the purpose of studying art as an incentive to their trade. Is it a number affecting the industries of the City of London?—I think so. When I find a man at Lambeth is repeating himself, and wants to do a new thing, I tell him to go to Kensington for a few days and look at certain sections. If he does come to the Museum, the firm will pay him for half his time; if he shows them that he has done his work at the Museum, and not simply taken a holiday elsewhere, they give him half his pay. They do that so as to encourage a constant reference to the Museum.

Is it the policy at Lambeth to vary the occupations of the work-people trained in your schools?—They can pass from the class of assistants to the class of artists, and they are very apt to develop in this direction if they have any natural gifts, because their drawing is kept up at the art school and their invention is stimulated in their daily work. By insisting on design we have a constant touchstone in the daily work by which we can ascertain whether a boy or a girl has invention.

## TESSERÆ.

### Whitworth Scholars.

J. H. REYNOLDS.

I THINK the history of the Whitworth scholars supplies an illustration of the injury that arises by taking men from workshop practice, in which they might have acquired greater efficiency if they had less general training. Some of them find occupation in teaching and in higher branches, in which their knowledge and capacity play an important part; but from inquiries I have made, there are many of them that prove to be practical failures, and from ceasing to take an interest in the practical work in which they have been engaged, they have found a very great difficulty in getting a livelihood. The history of the Whitworth scholars has been such as in many cases to prejudice the minds of practical men—employers more especially—against technical instruction. There is a great tendency on the part of the pupils who are successful in those scholarships to leave their occupations and go into teaching.

### The Apprenticeship System.

PROFESSOR AYRTON.

There must be some plan by which a man learns the manipulation of his trade; he must learn a good deal in the workshop which he cannot get at a school of applied science or in a technical school. I think possibly something like the present apprenticeship system should exist, but for a shorter number of years. The master at the present time gains by the apprenticeship system—the rise of pay that occurs the day that an apprentice ceases to be an apprentice shows the benefit the master has been deriving from the apprenticeship system. On the other hand, he has not been doing his duty all the time to the apprentice; he has not been giving him the instruction he ought to have been giving him. The conditions of trade prevent him doing it individually, and, therefore, as it is impossible for him to follow the old custom of giving personal instruction, he ought to help to provide the funds for technical colleges. I am inclined to think a considerable amount of good technical instruction could be given if a kind of technical school were attached to the large factories, such as there are in Sheffield and other places, the funds being provided by the masters. In this technical school attached to the factories, the workmen who might be compelled to come would not learn the manipu-



lation of their trade, but the application of science to their trade. The instructor would be receiving a salary from the masters of the works, and he would show workmen the practical application of scientific principles by taking the workmen about the works and explaining things in the works themselves.

#### **The South Kensington and Typical Museums.**

WILLIAM MORRIS.

It would be a great mistake to do anything that was really like breaking up the South Kensington collection. People who want to study the objects know that they are to be found there, and they can get at them with a certain amount of trouble. On the other hand, my experience in using the museum, and perhaps I have used it as much as any man living, is that the museum has got rather more things than it knows what to do with. I think that to break up a museum which has once been formed is a very great mistake. The things have a certain value in a great collection which they would not have in a small one; on the other hand, I do not think that a public museum need set itself to what is called collecting, or need try the sort of things that a private man with a long purse may do. At South Kensington the things are only wanted for educational purposes, and not as curiosities. You want types of good work, not a mere multiplication of articles. This typical museum in the metropolis should contain complete collections in all styles, and when an opportunity occurred for purchasing private collections, any gaps in the metropolitan collection should be filled up at the expense of the nation, but a good many things that were not wanted to fill up gaps in the metropolitan collection might be sent to the provinces. Then any superfluity in the metropolitan museum might also go to the provinces. I should like to say a word upon another point which has been mooted a great deal lately, and that is the circulation of articles belonging to South Kensington. I must confess I do not think it is a good plan. In the first place these things are extremely precious, and, if destroyed, can never be replaced. The risk in transit, though it may not be absolutely great, still is a risk, and should only be run when there is a strong necessity for it. There is another objection to the system of circulation of these objects. A museum, to be of any great use to those who are studying in it as artists or as designers, must be arranged in a permanent manner, so that one can come day after day and see the same thing; so that a man who is a lecturer can take his class to the museum and give a lecture on such and such an article, or that a manufacturer, like myself, can take a designer to the museum and say I want a thing done in such and such a way. Therefore I think it very much better that the provinces should have their own museums; if small ones, it does not matter so long as they are typical.

#### **The South Kensington Handbooks.**

SIR CUNLIFFE OWEN.

Some of the very best descriptive catalogues and standard works were prepared during Sir Henry Cole's administration. When he retired, it rather struck me that the cost of these catalogues being a couple of guineas in some cases, and a guinea in others, was more than could be spent by most people, and the Board authorised me to prepare a cheap edition of those books. We began by asking a man, very learned in art, Mr. William Maskell, if he would, with the consent of the authors of those standard works, such as Fortnum on "Majolica" and "Bronzes," and Nesbitt on "Glass," prepare a cheap edition of them. That consent was given, and these cheap editions have been issued at a shilling, under the editorship of Mr. Maskell, who has also been kind enough to write a standard work which came out in penny parts, called the "Industrial Arts." That has had an enormous sale, and has led the Department to issue shilling volumes on the "Industrial Arts of Spain," and on the "Industrial Arts of India." The money voted for catalogues is spent mostly in providing illustrations for those books. Once the illustrations are paid for, the book is launched on the world without our having any further responsibility about it. Messrs. Chapman & Hall, who have for a very long time been the agents of the Science and Art Department, undertake at all times to provide the South Kensington Museum, and all museums throughout the United Kingdom, with copies of these books at a shilling a volume, they taking all the risk of publication. The consequence is, that once the Department has paid the editor and the author for the book, and paid for the engravings, they are rid of all anxiety for the future. I can hardly say how many thousands of these books have been sold. I believe it is very nearly 100,000. I have had the gratification of frequently hearing employers say that they find these books being read in their workshops by the men in their meal hours. They are popular books among working-men, because they are fully illustrated, it being the object of the Department to bring before the people, as much as possible, illustrations of the various objects. I may mention that directly our book on the "Industrial Arts of India," by

Sir George Birdwood, C.S.I., was published, copies of it were bought up and a new lace was brought out at Nottingham called the Hindoo lace, the motive of which was taken from the book on the "Industrial Arts of India," if the design was not actually copied from it. The preparation of these books is going on at present.

#### **English Progress in Art.**

WALTER SMITH.

I think that we began in England entirely upon a wrong basis, a very unphilosophical principle, and we have been misled entirely by choosing that wrong principle. I was misled. I have made as many mistakes as anybody until very recently. I have only reproduced in my public work and teaching that which I was taught, and there was not one man who could be described as a thinker, or even as a great teacher amongst all the men who started the schools of design. I do not think there is one man amongst them who will live in history as an educator. We began wrong; we began by trying to teach people to draw the outline, for instance, of an object, which is the last thing that the eye sees; we began by teaching pupils to draw precisely that which does not exist, and that is the outline, and we have kept at it ever since. I think that the great advance in manufactures and taste, which there undoubtedly has been in recent years—a tremendous advance like a transformation, since I was a boy—is owing more to the revival of Gothic architecture than to anything else, and all the arts related to it, such as stone-carving, stained glasswork, ironwork, embroidery, tapestry, wood-carving, encaustic tiles, and all such work as that. The really strong element in the whole of the English industrial work has come from the architect's office; it has not come from the schools of art, and, comparing art now with what it was, I do not see such a very strong element of influence from the art schools in industrial design. I have seen in the shop windows and in private houses beautiful examples of the art our Saxon Christian forefathers would have delighted in; but in common honesty I think the schools of art have had very little indeed to do with it, not, for instance, so much as the architects have. But, as compared with the past, I think there is a transformation; I think that an Englishman to-day could no more be described as one of "a nation of shopkeepers" than a Frenchman; and that there has been an enormous advance made in a love of the beautiful and in good taste.

#### **The Education of the Artisan.**

PROFESSOR HUXLEY.

For myself, I look upon simple knowledge by itself as of far less importance to the artisan in his career in life than a number of other qualities. I do not say that knowledge is not an extremely good thing, but if a man is to make a good workman, or to do anything in practical life, you must give him an education which fits him for the conditions of life with which he has to deal, and you will not give him that education by filling his head with a number of intellectual abstractions, or even by giving him the largest acquaintance with scientific principles. And I think it is a profound mistake, considering the career to which the majority of artisans or persons in that class of life are necessarily bound, ever to take them out of the wholesome discipline of practical contact with the realities of life, for the mere sake of giving them a greater or less amount of knowledge. A man who is inclined to do so may always pick up knowledge, and he may do so at the same time that he is getting his education, in the highest sense of the word, out of his contact with the realities of his daily life; but if you make a bookworm of him, if you take him away from all that contact with reality and turn him back afterwards into it, he has lost touch of life. I speak with the greatest hesitation, because I have nothing to do with industrial pursuits; but I have had to do with mankind in many stations in life, and it seems to me that what is wanted in a foreman is a man of energy, punctuality, business habits, and power of dealing with men, all of which things are not to be got out of books or laboratory work. Those qualifications are the most essential qualifications in a foreman, and what you want besides in such a man is not book learning, but an intelligence sufficiently trained to be able to deal with new conditions, and an amount of knowledge sufficient to enable him to know where to go to find more if he wants it.

#### **Artistic Ability in England.**

JOHN SPARKES.

The natural capacity of the English is beyond that of any other country. In the last century we had Derby, Chelsea, Plymouth, Wedgwood, and many other art potteries established and flourishing without any Government subsidy, whereas Meissen, Sèvres, Frankenthal, and others did have either imperial or local subsidies. I should say that the taste shown in those works to which I have referred in this country was



at least equal to that which was shown abroad. At the end of the last century we had steel works at Wolverhampton, at which the steel ornaments in use at the French court were almost entirely made. Then we had certainly the greatest artists that had ever appeared in that age in Europe—Hogarth, Gainsborough, Reynolds, and many others—engravers far in advance of any that had appeared at that time in France or Germany. Owing, I think, to the absence of State systems of art education, we have developed men of more original artistic talent than any foreign countries. I would mention the names of Fred. Walker, Walter Crane, Caldecott, Herkomer—some of them artists in the largest sense, and men who have nearly all worked at industrial art in this country, and who have developed such a line of their own (for instance, Du Maurier and Keene in *Punch*, and Linley Sambourne and Kate Greenaway) that they are looked up to by the artists of Germany with wonder: they do not know how it comes that so much originality and technical power has been developed. Herkomer was trained in England entirely.

#### French and English Workmen.

LEON ARNOUX.

I think that the French are more facile in execution, and that the English have more patience. If you want a work well executed from a cartoon or an advanced sketch, I should rather have it executed by an Englishman than by a Frenchman; but if you want spirit and quickness in the execution I should say the Frenchman would be the superior: it is not something which comes from a particular disposition, but from the training they receive in the shops or the studios. The difference of the training in France is that they do a great deal more sketching than in England. In England, in the art schools, a vast amount of time has been wasted owing to the students being obliged or induced by their masters to make very highly-finished drawings. I speak now rather of schools in Staffordshire. I have seen pupils spending six or more months upon a chalk drawing, and wasting their time in making a beautiful copy which was to be sent to London for exhibition. A pupil, for instance, does a drawing from one of Grüner's lithographs. In the time that the pupil is doing it he might have done a hundred studies, and then he would have acquired a facility of sketching which would have done him a great deal more good; whereas when he had finished this copy he is no further advanced than before in regard to facility, besides getting the habit of being slow in execution.

#### Colourist Chemists in France.

ROBERT HAEFFELY.

In England there are very few chemists in print works; it is a very rare thing to have one. Generally the sampler is not a chemist, and this is one of the mistakes made in England. The sampler ought to be a chemist for this reason—that he has to know if certain colours are capable of being printed together. Some colours do not go well together; they precipitate, and so accidents may happen. All the managers in France are chemists, and they have under them one, two, three, or sometimes four young chemists. The managers in England are not trained at all in chemistry, whereas nearly all the continental managers, being generally Alsacians, are trained in chemistry, and the effects are more rational work, cheaper work, and more rational colours. The French managers, and the managers on the whole continent—namely, those of Germany, Russia, Austria, Spain, and Italy—are all, or nearly all, trained in Mulhouse. They are trained in Mulhouse in the laboratory, and most of them go through a practical apprenticeship of two years in one of the Mulhouse print works. It is pure chemistry for one and a half years, and the last half-year is specialised for calico printing.

#### Scientific Experts on the Continent.

J. LOTHIAN BELL, F.R.S.

In most European countries, certainly in Sweden, Belgium, Austria, Germany, and France (which pretty nearly exhausts the iron-making countries of Europe), the means of education are far more widely spread than they are in this country, and I think that has given rise to a class of scientific men of which we have not so many examples in this country—men who seem to devote their minds almost exclusively to industrial science. Professor Tunner has devoted a long life to metallurgical research. Then there are Professor Akerman in Stockholm, Grüner in Paris, and many others in Belgium, Germany, and elsewhere. In fact, this kind of instruction has been looked on for many years, I may say almost for centuries, with more favour abroad than it has been here. Going back as much as three hundred years ago, you have a very distinguished man writing on metallurgy in Germany, Agricola, a work so old as to be written in Latin. Then coming down to our own time you had Karsten, whom I met forty years ago in Berlin. All

these men devoted a considerable part of their scientific career to the investigation of matters connected with practical industry. I do not say that there are not such cases to be met with in England, but I think they are more frequently found abroad than they are with ourselves.

#### West Riding Designers.

FRANK CURZON.

I believe that the design of the country languishes solely from the utter want of preliminary culture on the part of the designers in literature as well as in art. I think that if those people were conversant with our poets, their taste would be more refined, and their designs better. I remember reading two papers to the Designers' Association, one on "Shakespeare as an Artist," and the other on "The Poetry of Colour," and it led to the most practical discussion by these designers—and they were only designers who were present. I believe we are suffering in England from the total absence of preliminary culture on the part of our designers. The West Riding Designers' Association met once a month for the purpose of having papers read bearing upon their immediate work, and discussing those papers. It should be extended; and I believe if it were it would do great service. The association is open to all engaged in the worsted, woollen, and cotton trades. They meet for the purpose I have stated—of discussing with each other the best mode of carrying out the object of design. They are imperfectly read men, with little knowledge of the harmony of colour, or the principles of art; they have therefore no means of checking their designs. They know little of our literature and of its wealth of suggestion for design, and they have but slightly realised the adaptation of natural forms to manufacture.

#### Limitation in Decoration.

J. H. POLLEN.

In decorative treatment we use natural forms altogether on abstract grounds, and we use them treated in an abstract fashion. Thus, the leaf of an acanthus, or the flower of a honeysuckle were, in Greek hands, of service without any reference to the fact that they were representations of actual leaves. Positive representations they really were not. A certain arrangement, viz., gracefulness of line and composition, made them useful, not by way of giving an idea of what an acanthus or a honeysuckle ought to be, but in order to decorate something else—a capital, a frieze, or the edge of a jar—things to which they have no necessary reference at all, but which they can set off by the intricacy of colour. Then, again, the colour of objects used in decoration has often no reference to those things, only to the things they decorate. Even the human frame has to be severely controlled, and its lines expressed in the most abstract way. The first principle, then, that distinguishes art in a decorative from art in a pictorial character is that of limitation. If we look at house decoration or engraving of plate, or other modern ornamental work, we are struck with the redundancy of it, or with the ill-judged attempts at finishing, rounding, shading, and so forth, as if the object were not to set off the thing decorated, but to give room for all the airs and graces of the artist. Decoration to be effective must, on the contrary, be limited. We cannot, except on occasions, do all that we might do in a picture. The leaf, scroll, fretwork, or whatever it is, has to be expressed as gravely, and with as little appearance of detail as its representation will admit of. The painter or engraver places himself within limits. What he does on a wall or a casket he does with all his power, but he has to remember that too much attention must not be attracted to his work. That work is the decoration or setting off of something else, not the sounding of its own trumpet.

#### HISTORICAL TABLETS IN EDINBURGH.

THE Plans and Works Sub-Committee of Edinburgh Town Council are engaged making up a list of places in the city that have become historical from their association with famous men, with the object of affixing to or near buildings bronze tablets with short inscriptions stating that so-and-so was born, lived, or died there. They have decided on affixing a tablet in Chambers Street as near as possible to the spot where stood the house in which Sir Walter Scott was born, and another to the house in Castle Street where the illustrious author resided. It is intended to mark the houses where Burns, Brougham, Hume, and others lived, and also the grave of Sir Walter Scott's father in Greyfriars Churchyard. They have also suggested that an obelisk should be erected in Greyfriars Churchyard where the bones of those who were interred in St. Giles's Cathedral, and which were removed at the time of the restoration of that edifice, are buried, near the spot in the churchyard where the Covenant was signed.



## NOTES AND COMMENTS.

THE handbooks which have been issued in connection with the Fisheries and Health Exhibitions do not appear to have been financially profitable, as it is proposed to dispense with similar publications in the forthcoming Exhibition of Inventions. It is precisely the kind of exhibition for which handbooks might be supposed to be a necessity. A substitute for them is to be found in prefaces to the various sections of the catalogue, which are to be written by men who are authorities on the subjects. Although catalogues were purchased by visitors to the two exhibitions, it was rare to see them used. We doubt if one person in a hundred will refer to the Inventions' catalogue, and probably not one in a thousand will have the energy to read the prefaces. In 1862, Baron MAROCHETTI's influential friends raised a little excitement about remarks which had been printed in a preface to the catalogue of the International Exhibition, which otherwise would have passed unnoticed by the public. But in spite of so good an advertisement, a reprint of the obnoxious preface was a failure. The majority of people go to exhibitions to be amused, and the managers have wisely resolved to procure additional attractions in the form of bandmen. Knowing this, is it not hard on men of science to be asked for essays, which are to be printed in order that by force of contrast the music and lighting may give more pleasure?

A BILL has been introduced by Mr. BROADHURST which proposes to enable leaseholders of houses and cottages to purchase the fee simple of their property. It applies to cases where at least twenty years are unexpired, and to life leases. The means to be adopted for ascertaining the value of property to the landlord are a jury of five persons, if the people interested prefer them to a county court judge, and a certificate that the purchase-money so determined has been paid into the court is to be taken as a conveyance. All questions of title are to be settled by the judge, as well as the distribution of the money among the rightful owners. As the tenant is supposed to set the machinery of the law in motion, the Bill proposes to make him liable for all costs in the county courts, unless in cases where the landlord or his representative makes an unfounded claim. Should there be appeals on questions of law or of fact, the costs are to be at the discretion of the court. Chapels and other buildings are comprised in the Bill, and it is also proposed to allow of the purchase of land in connection with a house where the area does not exceed three acres.

THE accounts have at length been made up of the exhibition of the paintings by M. MEISSONIER which was held during last summer in Paris. The total receipts amounted to 112,000 frs. But the expenses of insuring pictures, of which the value was about 20% a square inch, and carefully conveying them to and from the Rue de Sèze, with other charges, have been heavy, and have absorbed 70,000 frs. The amount available for charitable uses is therefore 42,000 frs. Of this sum M. MEISSONIER has asked that a fifth shall be divided among the poor of Poissy, near Paris, where he has a house, and the balance available for the night asylum, which gave rise to the exhibition, is accordingly 34,000 frs. The result is a testimony to the position which the painter holds in French art. His supremacy may be questioned, but what other artist could expect to attract so large a number of people to an exhibition for which one room afforded sufficient space?

THE variations in the amounts of tenders for the same work have often given rise to comments, and nothing appeared to be more uncertain than the position which a builder was to hold in a list when it was published. But tenders, like everything else, appear to be falling under the law of probability, and in the course of time all that surprise which made lists interesting reading to other people besides those concerned is likely to vanish. The new era has fitly commenced in New Zealand. Tenders were lately invited for the erection of a building in Christchurch for the Young Men's Christian Association, according to the designs of Mr. T. S. LAMBERT. Eighteen contractors applied for information, and their names were written at random in a book and numbered one to eighteen. Eighteen sealed

tenders duly arrived, and were brought before the authorities of the association. The amounts were placed opposite the names in the architect's book, and it was discovered that No. 1 in the book was the highest and No. 18 the lowest, the amounts of the remainder corresponding precisely with the order in which the names had been written. The coincidence was so remarkable that a declaration upon it was solemnly and sincerely made in the law courts. A New Zealand arithmetician has amused himself by applying the rule of permutations and combinations to the tenders; and he has calculated that the possibility of such a singular coincidence happening is as 1 to 6,402,373,705,728,000. That, of course, would be in an irregular place like England; but the random work of New Zealand is evidently the perfection of order. When QUETELET says that the actions of ordinary individuals are necessitated, he must have been thinking of the Southern Isles. Destiny has evidently resolved to make a model country there, and who can any longer wonder at the prophecy of a New Zealander seated on a broken arch of London Bridge sketching the ruins of St. Paul's? How he will wonder at the differences among the tenders when he studies one of our supplements!

IN the exhibition of one of the Belgian art clubs three drawings by M. KHNOPFF have been seen, which were intended to illustrate the book called "Le Vice suprême." One represented a nude figure of LÉONORA D'ESTE, and the face was made a striking portrait of Madame CARON, the opera singer. The drawing gave rise to plenty of discussion in Paris as well as Brussels, and it was not long before the lady heard of the liberty which had been taken. Madame CARON, accompanied by two of her friends, visited the exhibition and demanded that the drawing should be forthwith removed. The secretary declared that he had not the necessary power, and while the discussion was in progress M. KHNOPFF himself arrived on the scene. Madame CARON expressed her indignation, when at once the artist took the drawing from the frame and tore it into small pieces. The design, it appears, was most beautiful, and there is a work of art the less in Belgium; but the painter acted worthily in destroying a source of pain to a lady. The resemblance may have been entirely accidental.

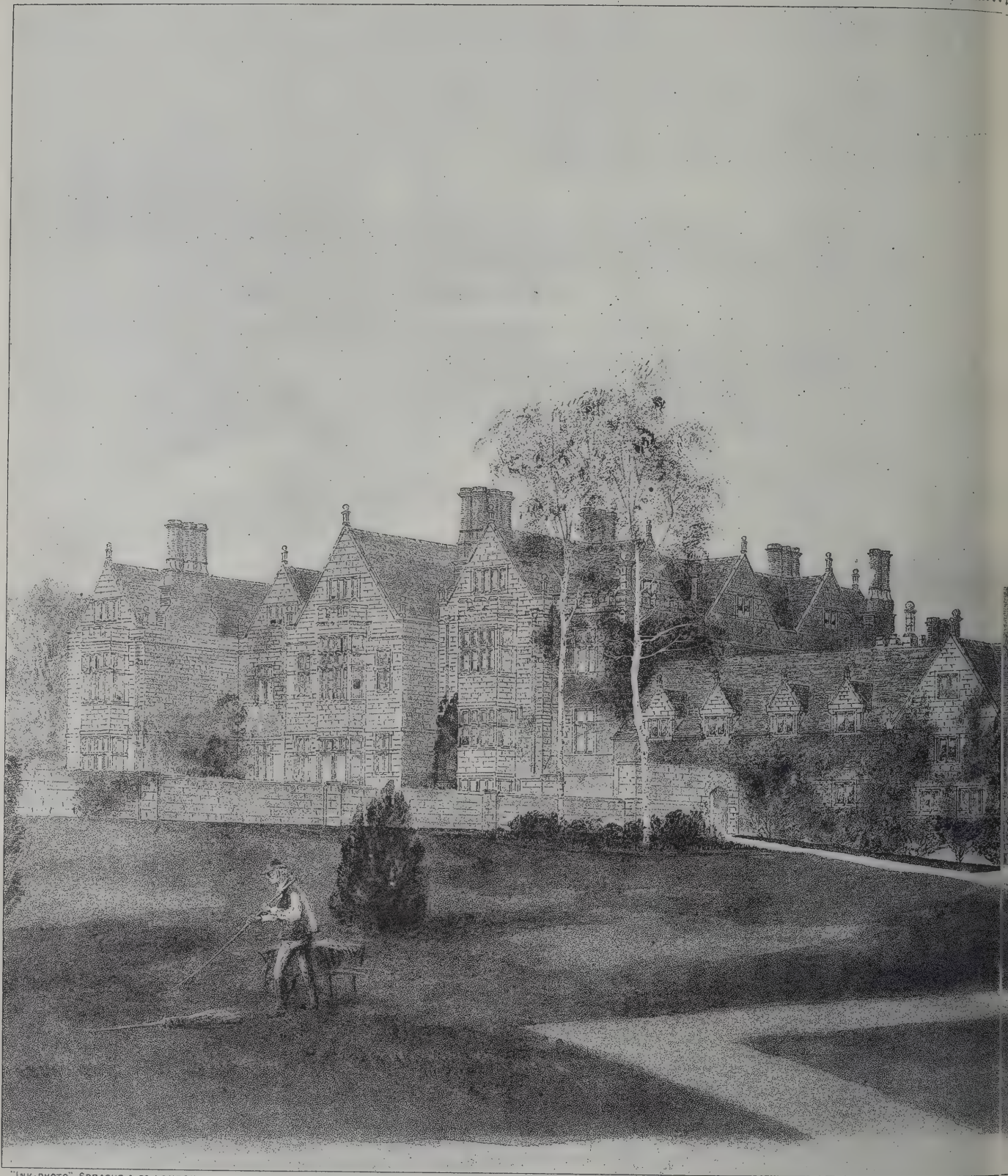
It is reported in the Bristol papers that a London architect has offered a salary of five shillings a week to a first-class clerk of works if he will undertake the superintendence of a building near that city. If the story be true, the depression of trade must now at least have reached its lowest point. But it is more likely to have been an invention of one of the local humourists. Bristol has an abundance of architects, and they are naturally resentful when a commission finds its way to the metropolis. If the Clerks of Works' Association survives, there is now an opportunity to display the eloquence of the members.

A DISCOVERY has been communicated to the Archaeological Society of Geneva by M. TH. DUFOUR, which is an addition to the history of engraving. There is a rare work consisting of forty plates of memorable historic scenes, which was produced by two engravers belonging to Lyons, named JEAN PERRISSIN and JACQUES TORTOREL. It appeared in 1569-1570. Little or nothing was known about the artists until 1861, when researches were undertaken in Lyons by M. ALLET and others, but, like a good deal of provincial work, they were ignored in Paris, and M. DUPLESSIS, in his "History of Engraving," which appeared in 1880, maintained that there was still no trace of the artists. By a happy thought, M. DUFOUR was inspired to examine the records of Geneva, and he has ascertained that the forty plates were engraved and printed in that city. The wood-blocks were cut by JACQUES DE CHALLEUX after PERRISSIN's designs, whilst the copper-plates were the joint work of TORTOREL and PERRISSIN. Several members of the PERRISSIN family seem to have come from Lyons to Geneva, the first registered being CLAUDE, a printer in 1554. Another was possessed of a house at Aïre, in 1635, and it is remarkable that a few years ago in the neighbourhood M. RAVILLIOD was able to pick up one of the original wood-blocks. The subject is *The Assassination of the Duc de Guise* by POLTROT, in 1563.









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SHOWING THE NOR  
THOMAS H. WATON



1885.



KENT.  
RECENTLY ADDED.  
ARCHITECT.











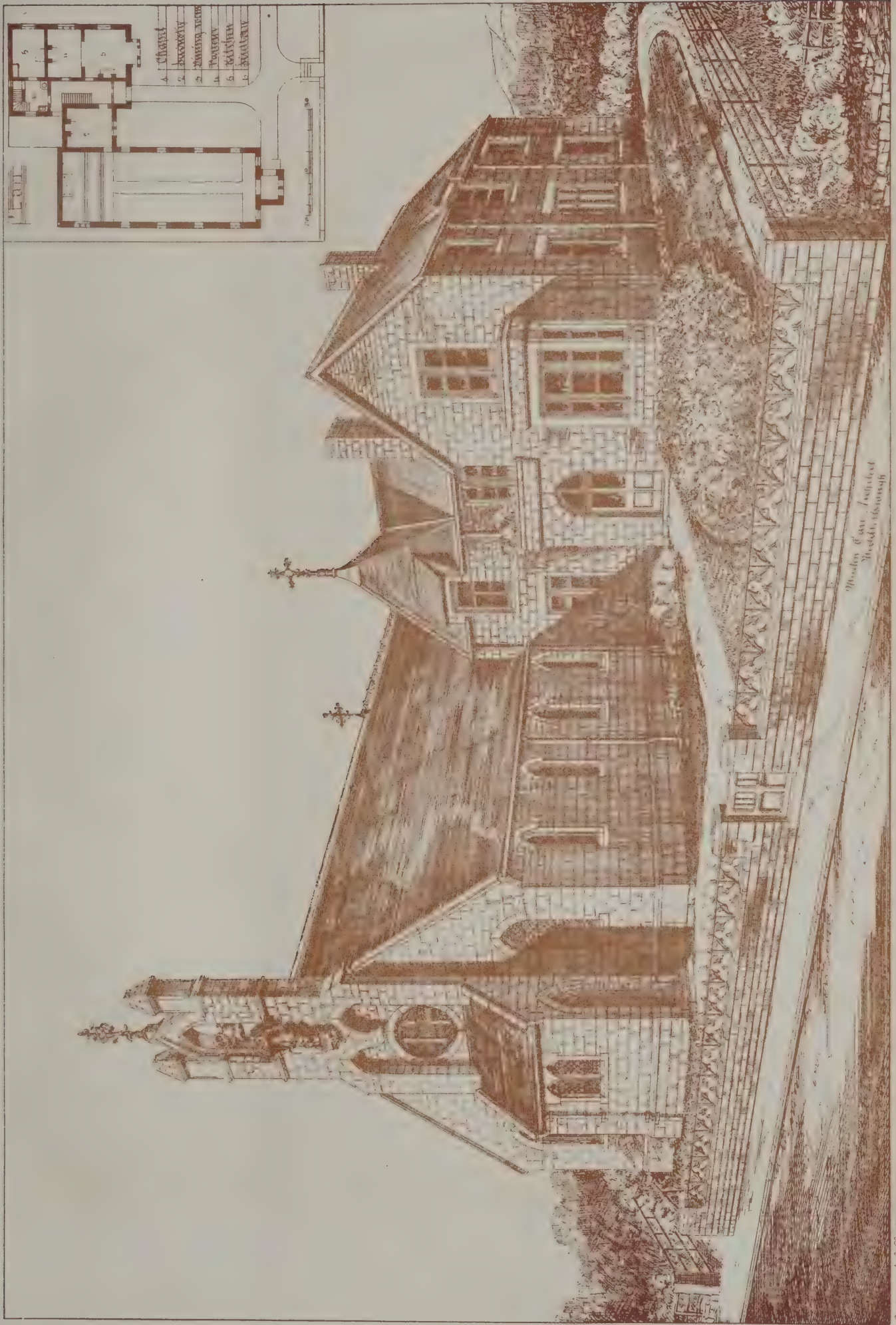


LLANSAINTFREAD CHURCH.

(INTERIOR.)

G. W. WILLIAMS, ARCHITECT.





R. C. CHURCH AND PRESBYTERY, STAITHES, YORKSHIRE.

MARTIN CARR ARCHITECT.

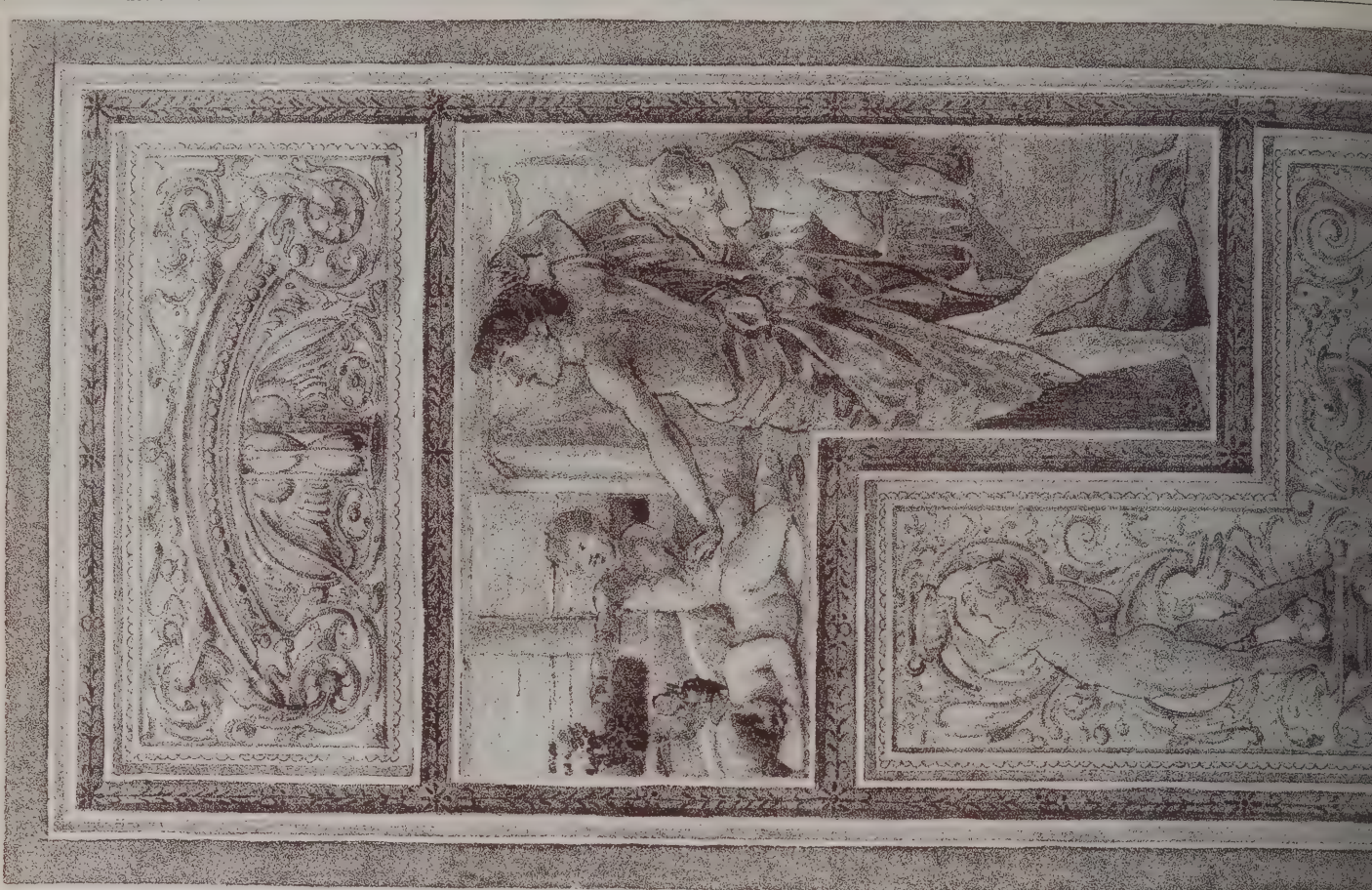
















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## DECORATIVE PANELS .

BY E. PAGE TURNER.







## ILLUSTRATIONS.

SOMERHILL, KENT.

THIS illustration is a reproduction of a drawing by Mr. THOMAS H. WATSON, F.R.I.B.A., exhibited last year at the Royal Academy, showing additions for Sir J. GOLDSMID, Bart.

DECORATIVE PANELS.

THE two designs from drawings exhibited last year in the Royal Academy, represent respectively *Morning and Evening*, *Noon and Night*, and are by Mr. E. PAGE TURNER, 115, Charlotte Street, Fitzroy Square. They are intended to be painted in oils, and the height of each panel would be 5 feet. The form of the space containing each of the above subjects has been chosen with the view of bringing pictorial treatment into harmony with the arabesque decorations.

LLANSAINTFREAD CHURCH.

WE publish an interior view of this building, which is now in progress, from the designs of Mr. WILLIAMS, of Rhayader. An exterior view and description were published last week.

R.C. CHURCH AND PRESBYTERY, OUR LADY STAR OF THE SEA, STAITHES, YORKSHIRE.

THIS church and presbytery, now in course of erection for the Rev. W. S. SULLIVAN, occupies a prominent site on the road between the picturesque fishing village of Staithes and Dale House, on the new Middlesbrough and Whitby Railway. The church, including sanctuary, is 60 feet long and 22 feet broad, built of rock-faced stone, with ashlar stone dressings from Boulby Quarries. The roof is open timber, boarded and slated, the whole of the woodwork being yellow pine varnished. A bell turret in front contains carved bracket and canopy for statue, and a bell supplied by Messrs. VICKERS & SONS, of Sheffield. Windows will be glazed with cathedral glass. Adjoining the church will be the sacristy and presbytery. The latter contains dining-room, parlour, kitchen, and scullery on ground floor, and four bedrooms and bath-room on first floor, built of materials similar to the church.

The Right Rev. Monsignor WITHAM, of Lartington Hall, has been a liberal benefactor towards this undertaking, which is intended to supply the religious needs of a large fishing and rural population. The contract is being creditably carried out by Mr. THOMAS DICKINSON, builder, Saltburn, from plans prepared by Mr. MARTIN CARR, architect, Middlesbrough.

## THE TAIT MEMORIAL, EDINBURGH.

THE memorial to the late Archbishop Tait, which was undertaken by the Scottish Auxiliary Committee, has been completed. It consists of a colossal bust placed in a mural monument sixteen feet high, which is built into the eastern façade of the Medical School Buildings—this site having been chosen as that of the house formerly existing in Park Place in which the late Archbishop was born. The monument is designed in the Italian Renaissance of the "Cinque Cento" period, in harmony with the University Buildings, and consists of a pedestal over five feet high divided into three compartments, in the central one of which is the inscription. On the pedestal rest two columns of polished grey granite, with moulded bases and sculptured capitals in bronze. These support a full entablature, with sculptured panels in the frieze, displaying in the centre the mitre, crozier, and pastoral staff, and in the sides the Christian monogram I.H.S., and the crest and motto of the Archbishop's family. The entablature is surmounted by a segmental pediment, in the tympanum of which is a bronze panel in bas-relief, displaying two cherubs supporting an Italian shield bearing the arms of the See of Canterbury impaled with those of the Tait family, and the motto, "Pro rege et patria." The bust, which stands upon a moulded plinth over the pedestal, and is set within a semicircular panelled niche, between the columns already described, has been executed in bronze by Signor M. Raggi, London, the sculptor who executed the Beaconsfield Monument in Palace Yard, Westminster. The monument has been designed and executed under the direction of Dr. R. Rowand Anderson.

## THE ARCHITECTURAL ASSOCIATION.

THE tenth ordinary meeting of the Association was held on Friday evening, the 20th inst., Mr. C. R. Pink, vice-president, in the chair.

The following gentlemen were elected members:—Messrs. F. C. Grant, A. E. Taylor, R. O. Allsop, W. Wynhall, T. H. Hitchin, F. E. L. Harris, Stephen Box, H. S. Freeman, S. D. Robins, J. A. Morris, H. Phillips, and A. A. Cox.

A vote of thanks was awarded to Mr. Alfred Morrison in connection with the late visit.

The next visit was announced for Saturday (to-day), the 28th inst., to Houses at Collingham Gardens, Messrs. Ernest George & Peto, architects, and St. Paul's Schools, Kensington, Mr. Alfred Waterhouse, A.R.A., architect.

Mr. H. A. Gribble then read a paper on

## Roman Renaissance.

Mr. GRIBBLE, in the course of his paper, said:—The Basilica of St. Giovanni in Laterano (St. John Lateran) was founded by Constantine, at the instigation of St. Silvester, in the fourth century, who is said to have personally assisted in digging the foundations. The façade was designed by Alessandro Gallilei in 1734. The dimensions of this church are very large, consisting of five aisles, originally divided by stone or marble columns, which in the middle of the seventeenth century showed signs of weakness, and Borromini was then consulted. In the emergency he suggested the idea of encasing the columns and filling up every alternate arch with solid masonry, and facing the nave walls with pilasters of the composite order reaching from the floor to within a short distance of the ceiling. These solid piers were adorned with large niches of a very debased style of art, and in which were placed statues of the Apostles of colossal dimensions. This arrangement was finally carried out, and, if we could only overlook the shortcomings in the detail, I think we must confess that the architect displayed high ability by his manner of dealing with the awkward task placed before him. The great ornament of this church is the first chapel on the left-hand side, and known as the Corsini Chapel. It is square on plan, but having a large recess on each of the four sides, thus giving it the form of a Greek cross. The whole is surmounted by a cupola and adorned with paintings and marble of the most precious description.

The basilica of S. Maria Maggiore has experienced little or no alteration since the date it was founded, A.D. 352. I would call your attention to the Chapel of the Blessed Sacrament, commonly called the Sixtine Chapel. It was erected from the designs and under the direction of Cavalier Fontana (one of the most gifted architects of his time), and in my estimation this work is not equalled by anything else in the city of Rome. Its plan is most beautifully conceived, and its interior elevation and decorative treatment is certainly equal in merit to the plan. It is one mass of marble, gold, and fresco; so beautifully and tastefully arranged that the eye of the most educated artist could not be offended at it. I have the good fortune to possess both a plan and a section of it, which are also displayed in De Rossi's collection of chapels. There can exist no doubt but that this gem is the acme of perfection in the Renaissance style of architecture, and what every architect at the period would have done if his ability and the means at his disposal permitted it. Its *vis-à-vis* is that known as the Borghese. It is very similar in plan to the other, but not so rich in treatment. It is, nevertheless, an important adjunct to this ancient and magnificent church, where any young and enthusiastic disciple of architecture could take up his quarters for a couple of months, and well occupy his time by carefully delineating the multitude of precious works of art, both plastic and polychromic, which present themselves at every nook and corner within its sacred walls.

The plan of the churches during the sixteenth, seventeenth, and eighteenth centuries was governed in no small degree by the site upon which the church was to be built. If the ground would permit, it was a repetition on a small scale of St. Peter's; that is to say, the plan should be rectangular, the nave and transepts forming the cross, and the intersection being crowned by a dome, with the aisles utilised as chapels. If the site would not permit of a Latin cross plan, it was made either circular or octagonal, with all the outlying corners utilised as sacristies and offices, which, in most cases, were ingeniously dealt with, only we must bear in mind that it must have a cupola.

Rome being surrounded by a wall, the value of the land was increased to such an extent that the churches as a rule were packed in between a host of dwellings, in such a manner as to deprive us of forming an idea of what the external architecture of these churches might have been had circumstances permitted the architect the indulgence of an undisputed area. This misfortune may probably account for the conspicuous absence of side windows and the recourse to top lighting. If this assumption is correct, I must only repeat the old adage, that "out of evil comes good," for we must all admit that the



most satisfactory method of illuminating a large building is either by obtaining light from above or by some large opening over the entrance end. In the south of Europe this question is more easily disposed of than is possible in the City of London, in consequence of the brilliancy of the atmosphere with which the former is favoured. I do not hesitate to say that did our own St. Paul's, with its cupola exist in Southern Italy, the cartoons which are now being exhibited *in situ* as a suggestion for its future embellishment, would be fully seen and appreciated by the public, but that I fear (and I regret to say it as they are so beautiful) they will be lost for ever in a region of darkness. The usual method of covering the churches of Rome is to give them a waggon-headed ceiling of concrete, penetrated by smaller jack-vaults, a necessity caused by the clerestory windows. Now this arrangement of covering the nave gives the architect a considerable amount of responsibility and also anxiety in consequence of the immense lateral thrust exercised by the vault, for it must be remembered that the builders of this age had not the opportunity of using Portland cement, but were confined to the ordinary lime and pozzolana and thin brick in use at this date, about  $1\frac{1}{4}$  inch to  $1\frac{1}{2}$  inch thick; with these materials it was necessary that the vaulting should be of great thickness, so as to secure sufficient strength and stability.

In one case, where I had the privilege of going up into the roof, it gave me an opportunity of making an examination of the material itself, and I found it composed of coarsely-made concrete, 2 feet thick at the crown instead of 7 inches, which I have ventured to risk at the Oratory Church. Notwithstanding this great thickness of material there was a rent running the whole length of the nave, threatening the utter destruction of the building, and, to prevent such a catastrophe, the springing of the vault was secured by wrought-iron ties, 3 inches square on section.

The church of St. Ignazio, designed by Padre Oratio Grassi, and commenced 1626, is one of the most important in the city, and belongs to the order of Jesuits, having an internal length of 270 feet with a nave 60 feet wide and 100 feet high.

It is very simple, having the cross formed by the nave and transepts; in each aisle are three chapels, with two additional ones on each side of the sanctuary, all crowned with a small cupola. The pilasters in the nave are of the Corinthian order, fluted, and rest on the floor, not on pedestals; this arrangement answers exceedingly well in a church where fixed benches and pews are practically unknown. The nave, or what are sometimes called the clerestory arches, those which lead into the chapels, spring from detached columns, and, if I remember correctly, there are only two solitary instances of this arrangement among this vast collection of temples. The usual custom is to make the arches spring from imposts, the same as we see at St. Paul's Cathedral, but the architect of St. Ignatius did not do as Sir Christopher did, and cut away his architraves to give room for the arch, but, on the contrary, he kept them below the level of the necking of the capitals of the principal order. This, I think, is unfortunate, for if the arch was carried higher, the keystone could be so arranged as to apparently support the centre weight of the architrave. This church, though originally intended to be graced with a cupola, still remains without one, and, as a substitute, the area is covered with a vault of the section of a watch-glass, upon which is painted a perspective view of the interior of a dome, by Andrea Pozzo. This design and perspective drawing of the cupola is not the only relic in this church of the talent of Pozzo, as the high altar, and that in the left-hand transept, together with two others in the aisles, and also the decoration of the nave ceiling are the fruits of his ability.

The dome of St. Peter's is generally considered to be built on four arches, but in reality it is built on an irregular octagon, with the octagonal sides filled up solid; this arrangement, if the nave and aisles are sufficiently wide to allow a fair proportion to the arches, gives an appearance of great stability to the piers. In this arrangement the dome exceeds the width of the nave and transept walls, which are its natural abutments. I regret that during my stay in Rome I did not ascertain the mode of construction of this portion of the first church in the world, but I looked for a repetition of it in that city, and only discovered one instance of it, and that was in the church of St. Antonio della Nazione de Portoghesi, in which case it exceeds the width of the nave by about one-third. In the case of our own St. Paul's, the cupola is carried on eight arches, the springing of which above the piers has an exceedingly weak appearance, and conveys the idea to the spectator that it is unequal to the task of supporting the superincumbent weight; but on visiting this building lately, I found a number of workmen engaged in erecting a wooden framing of arched form, reducing the radius of the arches at the octagonal arches by about 8 feet (I presume by way of experiment). If this be the case I have no doubt but that it will succeed in giving an impression of strength where it badly wants it.

The church of the Gesu is close to the Corso, and a little north of the Capitoline Hill. It is similar in plan to St.

Ignazio, and was commenced in the year 1575, just one hundred years before our own St. Paul's, from the designs of Vignola, but the façade and cupola were carried out by another architect, Giacomo della Porta. The length of this building is about 200 feet, the width of the nave about 50 feet, and the height about 90 feet. The building as a whole is satisfactory both in proportion and in colour. The interior is rich in marble, and richer still in scagliola. One of the principal objects of attraction in this church is the altar of St. Ignatius, designed by the before-mentioned Andrea Pozzo, an engraving of which, two hundred years old, gives some idea of his work. It is chiefly of polished marbles of the rarest description, with a large central niche containing a statue of the saint, and adorned at the top with a marble group emblematical of the Holy Trinity. On each side of the altar are large allegorical groups, also in marble, one representing the *Triumph of Religion over Heresy* and the other *Christianity embraced by Barbarous Nations*. These works are by Messrs. Theodore & Le Gros.

St. Andrea della Valle, adjoining the relics of the Theatre of Pompey, is one of the best specimens of Roman churches. The designs were furnished by Olivieri in the year 1591, but finally carried out by Maderno, and the façade by somebody else. The plan of this church, together with its dimensions, are similar to that of the Brompton Oratory. It is a most attractive building, not only from its agreeable proportions, but also from the wealth of its decorative treatment, where the skill and ability of the most distinguished artists extant at the time were displayed. The fitting up of the first chapel on the right was entrusted to Fontana, and that adjoining it to Michel Angelo. The cupola is one of the most beautiful in Rome, and springs from a base similar to that of the Ignazio and the Gesu. The chapels adjoining the dome piers are contracted, an expedient no doubt to give strength to the piers supporting the cupola. The Oratory Church at Rome (Sta. Maria in Vallicella, better known as the Chiesa Nuova), and the Order of Oratorians were founded in the year 1575 by St. Philip Neri, just one hundred years before the commencement of the building of St. Paul's Cathedral. It measures 220 feet long and 50 feet broad, and is 98 feet high, and is one of the most highly decorated churches in the city, the architect being one Martino Lunghi. The arrangement of the plan is somewhat different to that usually adopted by the clergy at this period, for instead of the customary three large chapels on each side of the nave, there are five comparatively small ones, which suffer from want of light; and the chapels having windows on each side of the altar, give an air of insecurity, which effect is not experienced when the lighting is obtained from the ceiling or other lofty positions. The cupola of this church differs in form from that usually adopted in other churches, and is conspicuous by the absence of a drum, which form, singular to say, I proposed for the church at Brompton; but there is one point which I noticed in the dome piers of nearly every domical Roman church. It may seem too trivial to call for a remark, but at the same time trifles often contribute towards the success of a harmonious whole, and consequently I shall call your attention to it. The usual method adopted was to so plan the piers that they should possess the maximum of strength, and to do this pilasters were made exceedingly shallow, and the four corners of the square filled up with masonry, giving an octagonal splay. I look upon this arrangement as a misfortune, æsthetically speaking, for if the pilaster project only 12 inches or 9 inches, and the pendentives spring from plumb over the splayed angle, it allows for the visible arch supporting the cupola only the 12 inches or 9 inches, which conveys a sense of weakness and looks exceedingly mean. In the case of the Roman Oratory the architect discovered this when he arrived at the cornice, and instead of making the pendentives to spring from the octagonal corner, he commenced by starting from the inner angle, and so secured an arch of about 2 feet 6 inches deep, and which was his only way out of the difficulty. This building, like the others previously described, is very rich in marble veneering, and also in frescoes. The whole of the floor of nave, aisle, and chapels is of polished marble, inlaid with floral patterns. Should any student of architecture visit Rome and call at this church, I feel that he would be very graciously received by the reverend fathers, who would be only too pleased to render every information required. The residence of the clergy, including the Little Oratory and Library, were, I understand, confiscated to the Crown after the siege of Rome, about fifteen years since, and used by the authorities as the assize and other law courts. In fact, during my visit the clergy, in whose possession the Library had been for over three hundred years, had to ring a bell and obtain permission for me to see this portion of the building, and on entering I found certain individuals, who were appointed by the Government, making an inventory of the books and other treasures, for the purpose, I was told, of forming a national collection.

Mr. Gribble concluded his paper by remarks on the external architecture in Rome.

At the termination of the paper a vote of thanks was pro-



posed to Mr. Gribble by Mr. Blashill; this was seconded by Mr. Gotch, and supported by Mr. Julian and Mr. Blagrove.

### EDINBURGH ARCHITECTURAL ASSOCIATION.

THE usual fortnightly meeting of the association was held in the Professional Hall on Monday. The president, Mr. G. Washington Browne, was in the chair. Mr. J. C. Watt read a paper on "The Poetic Aspects of Architecture." His object, he said, was not so much to pronounce any rhapsody upon the Classical examples which many ages had produced in considerable number as to elucidate the principles of beauty of which poetry was the verbal exponent, and art and architecture the visible embodiments. Those principles lay at the root of every outward manifestation of beauty, and forming, as they did, an essential part of the laws of nature, required certain interpreters. Those interpreters he found in the poet whose function was to express the ideal in words, the architect who put the same or relative idealistic conceptions into the poetry of form, and the sculptor and painter who exercised the same office in stone and colour. After glancing at the beginnings of architectural art and the poetic origin of many of its forms, the lecturer proceeded to draw a parallel between the mental conditions, the modes of work, and the productions of poetic and architectural genius at certain periods in the progress of culture, showing generally the coincidence of abruptness, brevity, or power in the earlier or tribal poets with monoliths, mounds, and kindred exhibitions of architectural conceptions. This parallel was continued to modern times when poets, on the one hand, rebelled against phantoms and allegorical figures, while the architect, on the other hand, about the same time embodied the same poetical figure in the wealth of garnishing which marked the Gothic style. The lecture was concluded by a reference to the characteristics and emotions common to poetry and architecture, particularly sublimity, symbolism, and association. After several gentlemen had spoken, a hearty vote of thanks was given to Mr. Watt.

### THE LIVERPOOL AUTUMN EXHIBITION.

THE report of Mr. Dyal, the curator, on the late exhibition of pictures held under the auspices of the Corporation of Liverpool, has been issued. The exhibition was opened on August 30, and closed on December 6, 1884, having been available to the public on eighty-four days. The total number of visitors (calculating each season-ticket holder as one), amounted to 105,774; these comprised 39,332 at 1s., 21,401 at 6d., 41,577 at 3d., and 3,464 holders of season tickets. In addition to these, nearly 10,000 pupils of schools of various denominations, as well as Board Schools, were admitted free. Out of 4,847 works of art contributed, 2,280 were exhibited, and of these 291 were sold, the catalogue prices of which amounted to 12,313*l.* 7*s.* 6*d.*, being the largest amount ever realised at any of the Corporation exhibitions.

The proposal of Mr. Ald. Samuelson to inaugurate the extension of the gallery by inviting the various art societies of the kingdom to occupy separate rooms in the building with representative exhibitions of their members' works was most cordially responded to, the result being a collection unique in character and importance. In consequence of the allocation of separate rooms to the various societies, and the very large number of works contributed to the general exhibition, the committee were placed in a position of great embarrassment owing to their inability from want of space to hang many works of great merit, which had therefore to be returned to the artists. The 2,280 pictures exhibited were contributed by 1,104 artists, and 20 per cent. of these found purchasers for their works.

An analysis of the catalogue prices of the works sold shows that they ranged from 1,500*l.* to 10*s.* 6*d.*, the latter sum being for an etching; 235 were under 50*l.* in value. This fact affords gratifying evidence that the exhibition holds out inducements to a large number of persons with moderate incomes to become possessors of works of art of acknowledged merit, and that by this means the public taste in art is becoming greatly improved. Experience in the working of the exhibitions shows that the public of the present day evince a more matured judgment in their purchases; and although many works of great artistic merit remain unsold, it is seldom from want of due appreciation of the ability shown in their production, but more frequently from want of interest in the subject, unsuitability as to size, or that the prices affixed place them beyond the reach of ordinary buyers.

The following pictures were purchased from the exhibition for the permanent collection, viz.:—*A New Light in the Harem*, by Mr. Fredk. Goodall, R.A. (1,500*l.*); *Rival Grandfathers*, by Mr. John R. Reid (800*l.*); *Dante and Beatrice*, by

Mr. Henry Holiday (735*l.*); *The Old Soldier*, by Mr. James S. Morland (160*l.*); *Golden Moments*, by Mr. Isaac Cooke (105*l.*); *Missed*, by Mr. Julius M. Price. A large drawing, by Mrs. Marie S. Stillman, entitled *Madonna Pietra Degli Scrovigni*, was also purchased by subscription and presented to the permanent collection, through Mr. Harold S. Rathbone. The exhibition also included the notable picture *Isabella and Lorenzo*, by Mr. J. E. Millais, R.A., purchased by the Corporation just prior to the opening.

In concluding his report, the curator has great pleasure in recording the fact that the large number of visitors to the gallery were unanimous in expressing the opinion that the exhibition was the finest display of contemporary art ever seen in the provinces. The various art journals and the press generally have spoken of it in the highest terms; it was visited by many artists of eminence, and by art connoisseurs and critics from all parts of the country, while the noble suite of rooms recently added by the splendid munificence of Sir Andrew B. Walker, the generous donor of the building, has elicited admiration from all classes of the community. The recent additions to the gallery, including as they do ample space for the reception of pictures, large and commodious rooms for unpacking and repacking, and the provision of a lift by which the pictures are taken direct to the exhibition rooms, have greatly facilitated the working of the exhibition. The galleries may now be regarded as the most complete of the kind in the kingdom, combining every convenience for the display of the permanent collection, as well as affording ample space for the autumn exhibitions or for other artistic purposes.

### THE COMMISSION ON HOUSING THE POOR.

AN unofficial report of the recommendations of the Royal Commission on the Homes of the Poor has somehow found its way to the *Standard*, and, although its accuracy has been denied, it may be true in substance and direction, while not entirely correct in every one of the details. One of the chief results of the inquiry, it will be found, is that the evils which have been exposed on several occasions arise not so much from actual deficiencies in the existing law as from the incapacity of some, and the unwillingness of other, local bodies to put the existing Acts into operation. For example, in the 35th section of the Sanitary Act the Commissioners believe ample powers may be found to remedy many of the grievances complained of. Many local authorities, it has been discovered, have allowed the section to remain a dead letter, not merely from indolence and the well-known hostility of interested persons, but from sheer ignorance of its existence. The innumerable Sanitary Acts are more than sufficient to confound and bewilder well-meaning vestrymen of ordinary intelligence. In order to get rid of this difficulty, it will most likely be proposed that all existing Sanitary Acts should be consolidated, and something like a clear and concise code laid before the local authorities.

The financial branch of the subject evoked much difference of opinion. Representatives from all parts of the country insisted that public loans should be obtained on more favourable terms, more especially where the security of rates, as well as of land and buildings, can be obtained. It was also suggested that the deposits in Post Office Savings Banks and other funds should be utilised for the erection of artisans' dwellings at a rate of interest a little above that allowed on the deposits by the Government. Others, again, notably the Treasury witnesses, urged that to employ the funds in this manner might involve serious losses to the State. In their report the Commissioners are disposed to take a middle view on these points. The inhibition by Parliament of advances at less than 4 per cent. by the Public Works Loan Commissioners for rebuilding workmen's dwellings is a rule which might be modified with advantage. There might be, for instance, a reduction of three-eighths per cent. on the present irreducible minimum of 3½ per cent. In point of fact, the Commissioners think money should be advanced at the lowest possible rate without involving loss to the National Exchequer, and that previous losses should not be brought into account. On the other hand, they decline to advise any such appropriation of deposits as was pressed upon them, disapproving of any special treatment of the funds derived by the State from special sources. The evidence brought before the Commission tended to show that Lord Shaftesbury's Labouring Classes' Dwellings Act of 1851 had altogether failed to achieve any useful purpose. This was mainly owing to the want of machinery to put it into operation with expedition. In London it might with much advantage be made metropolitan instead of parochial; compulsory powers might be given to the local authorities to purchase land by Provisional Order, and there should also be a special application of this Act to rural districts.

It was stated before the Commission that Sir Richard



Cross's Act had done more for the dwellings of the poor than any other enactment. The Amending Act of 1882, however, had not realised the hopes entertained respecting it; though it is only just to add that sufficient time has not yet elapsed to test its results. As to the bases of compensation and valuation, the Commissioners put forward some very important suggestions. The law at present does not recognise, as it should do, that overcrowding puts a premium upon property. Moreover, undue facilities are allowed for opposing the confirmation of a Provisional Order. These should be confined to the grounds that the area is not an unhealthy area, or that the site is not really required for the scheme. Even with these improvements it is thought that the system would still be very costly, compared with what is done in other countries.

Of more general interest to the country at large, and probably of profounder influence, would be the adoption of the Commissioners' suggestions for the simplification of the transfer of house property, and the general diminution of the legal expenses connected therewith. These proposals, perhaps, would have a most drastic influence in the way of reducing costs and clearing away the legal subtleties which obstruct the free acquisition of real property. The object of the Commissioners is to enable the wage-earning classes to obtain a good title to a small house or plot of land, without difficulty or unnecessary expenditure. For this purpose, it is suggested that the Metropolitan Board of Works in London, the local authorities for other urban sanitary districts, and the Courts of Quarter Sessions elsewhere, should each appoint a committee for the transfer of land and tenements, and to examine into questions of title, exacting in return a small charge, say, two per cent. on the purchase-money for every transfer. These titles, when completed, are to be inscribed in the Probate Register, or in the local County Court, for future use. It is hoped, with titles guaranteed in this way by the local authorities, owners would have no difficulty in obtaining advances from building societies.

The Commissioners will doubtless have some important observations to make on the subject of "betterment," and as to whether or not owners of adjoining property which has been increased in value in consequence of public improvements should pay more than their proportion of the rates of the town. Some amendment of the Settled Land Act will probably be proposed, so as to enable freeholders of an entailed estate to dispose more freely of sites, and authority may be sought to allow trust funds to be applied, under certain circumstances, on other than the "best terms" where the object is the erection of workmen's dwellings. Increased powers will also be proposed to be given to the ground landlords of leasehold premises to have effective control over sanitary improvements; and permission will be asked for the authorities to proceed against the simple fee-owners, or any other of those who hold intermediate interests between the owner and the actual occupier, for sanitary neglect. It is further strongly recommended that powers to impose penalties for the non-abatement of nuisances shall be more rigorously and generally applied; that it be made punishable to own property not in a habitable state; and that an owner should be held civilly liable for any death or sickness that may be caused through his neglect, and summary procedure be provided for the recovery of damages in such cases. The Commissioners are likewise in favour of transferring the duty of discovering illegally inhabited cellar-dwellings from the district surveyor to the local sanitary authority. Railway companies should be required to re-house persons displaced by demolitions, and should also be precluded from using the dwellings so substituted for any other purpose, without the consent of the local authority.

#### HULTON ABBEY.

A PAPER was read by Mr. Charles Lynam, architect, at the last meeting of the North Staffordshire Field Club, on this subject. In June last Mr. Lynam conducted an excursion of the members to the site of the abbey at Hulton, and subsequently to Keele Hall, where the "finds" recovered from the excavations on the site had been removed. Particulars of the discoveries were then published. The founder of the abbey, Henry of Audley, lived in the reigns of King John and Henry III. The remains of the abbey were discovered in an accidental manner last year by some labourers who were repairing defective drains coming across some stone coffin-lids. Further excavations revealed a portion of a wall of dressed stonework, and under the sanction of the Rev. W. Sneyd, on whose estate the site is, the work of uncovering the foundations has been persevered in until every wall of the former buildings has been met with to a greater or smaller extent. By means of plans, Mr. Lynam explained the character of the monastery, which was of the Cistercian order. The church must have been a noble building, measuring 203 feet in its extreme length, 107 feet across the transepts, 75 feet through the body, with a

chancel 27 feet wide and 46 feet long. The church was cruciform in shape, and consisted of nave with north and south aisles, transepts with two eastern chapels to each, chancel, and tower at the intersection of nave and transepts. The nave was of seven bays. Some of the remains of the church were as complete as when they formed integral parts of the actual buildings, disclosing a building at once vast, strong, skilful, and artistic, and fit to be ranked amongst the foremost of those erected by this order of Cistercian monks. Having described the character of the abbey buildings, including a chapter-house 43 feet east and west, and 32 feet north and south, Mr. Lynam said that coffins and human remains met with during the excavations had not been disturbed. The abbey was situated to the east of the Trent about 200 yards, and on rising ground. To the south of it was a stream which brought clear water from the hills to the east. This water was dammed, first for the purpose of working the corn mill, and was then carried round the south and west boundaries of the abbey, and afterwards ran into a series of fish-ponds, which supplied the monks with a considerable part of their diet; finally it emptied into the river Trent, on which there was another mill hard by.

Mr. A. Scrivener moved a vote of thanks to Mr. Lynam for his interesting paper, and for the unwearied exertions and attention he had displayed in connection with the excavations.

Mr. Spanton seconded the motion, which was warmly accorded.

Mr. Lynam acknowledged the vote, and proposed that the President be requested to write to the Rev. W. Sneyd asking that arrangements might be made for the admission of members of the club, and others interested in the archaeology of the district, to view the remains of the abbey; also asking Mr. Sneyd to consider whether he would not restore the bases of four of the chapter-house columns, which have been removed to Keele Hall.

Mr. A. Leech seconded the motion, which was carried.

## Bygones.

*"Antiquity after a time has the grace of novelty."*—HAZLITT.

#### THE CASE OF R. R. REINAGLE, R.A.

WE believe that no more than two cases have occurred of the expulsion of a member from the Royal Academy. In 1799 James Barry was first removed from his professorship of painting, and immediately afterwards was expelled on account of his attacks on his brother academicians. In 1848 Ramsay Richard Reinagle, a man of much less importance than Barry, was called upon to resign. It was alleged that a picture exhibited that year by him as his own was in reality the work of a young man, which he had purchased in a pawnbroker's for a couple of guineas. A prize-winner in the Art Union selected the painting from the exhibition, the price being 40s., and when he was informed that it was not a veritable work of Reinagle's, the case was brought before a committee of the Royal Academy. After an inquiry, Reinagle was expelled, but justice was tempered with mercy, for in consideration of his age and associations—his father was also an Academician and one of the earliest students—a pension was granted to him, which he enjoyed for fourteen years. He died in 1862 in his eighty-seventh year. Reinagle did not admit that his punishment was deserved, as will be seen from the following statement:—

In the year 1848 I sent a picture, among others, to the Academy exhibition; it was a marine picture, No. 41 in the catalogue; it was not signed by me, but it was called in the catalogue by my name. On May 12 I received a letter from the secretary, stating that a Mr. J. W. Yarnold asserted this picture was his production, to which he and another were ready to swear on oath, and requesting me to deny the truth of such a calumny. This I did, and said that four witnesses saw me paint it.

No notice was taken of this Mr. Yarnold's assertion by the Academy until a prizeholder in the Art Union, Mr. Bilbrough, having chosen the picture No. 41, when Mr. Yarnold applied to the Art Union authorities, and stated what he had before done to the Academy secretary, and then the Art Union secretary forwarded Yarnold's statements to the Academy, a copy of which was also sent to me by Mr. J. P. Knight, the secretary of the Academy, and at the same time a letter enclosing the same statement from the Art Union office. I replied to these by reasserting that I had painted the picture, that the entire surface picture was mine.

I received a letter from the Academy, dated July 26, 1848, informing me they had appointed a committee to investigate the



charges brought by Mr. Yarnold against me, and requiring to know when I should be prepared to rebut the aspersion cast upon me. I replied, August 15, by sending a protest against the right of the Academy assuming a judicial power, administering oaths, examining witnesses, &c., and stating that, having once given my word, I would not submit to be brought before any committee of my fellow academicians. I referred the council for any further explanation of my feelings to Sir Richard Westmacott. I also requested to be informed under what article of our laws or bylaws any portion of the body of the Royal Academy can establish themselves into a jurisprudent assembly. In this view I was confirmed by the advice of a fellow Academician, who also held Her Majesty's commission as a county magistrate. I had said also, in my letter of July 24, that I would rather resign my seat than be subjected to examinations such as that proposed, and after having once passed my word of honour.

On September 11 I was officially informed that the committee of investigation had reported the evidence to the general assembly, and it was resolved that Mr. Reinagle be requested to save the Royal Academy the necessity of further proceedings by resigning his diploma as a Royal Academician, as suggested by himself in his letter dated July 24, 1848. Another resolution was passed, the purport of which was to inform me that, notwithstanding my declining to attend the meeting of the committee of investigation, the report, together with the evidence, is open to Mr. Reinagle's inspection, on application to the secretary. On September 13 I resigned, and on October 19 received the notification of its being accepted unanimously by those who were present, several academicians not attending the meeting. The proceedings having been presented to the Queen for her sign manual, were rendered complete; and at the next general meeting in November Mr. Westmacott was elected into my place, the son of the chairman of the committee of investigation.

I now come to the statement of facts, which I perhaps imprudently refused to state to the committee. My excuse is that I felt so indignant at being summoned, as it were, face to face with brokers and Mr. Yarnold, who is one of the class of painters who produce imitative pictures, as I shall prove eventually, that my feelings prompted me to adhere proudly to my first assertion, which was and is the truth.

A pupil of mine, Mr. Blackall, having seen a certain picture in a state of dead colour, or little more, in the shop of Mr. Pike, the broker, in Mary Street, Hampstead Road, asked me to come and look at it. His idea was that it might be painted into a capital picture. It was bought by him for three pounds. I then began to paint upon it, giving lessons upon it to my pupil, Mr. Rogers, of Birmingham, then resident with me. Mr. Blackall also saw me painting it, and Signor Fabroni. I painted every part of the surface of the picture, and, excepting the design of the outline, nothing whatever remained of the first painting on the canvas; and whoever may have painted first upon it had little more claim to be the author of the picture than the workman who covered the canvas with the priming. Having nearly finished this picture, I had business at Exeter, and took it with me to finish. There I worked again at it in the presence of Mr. J. Saywell, a gentleman well known there for many years. The picture was exhibited there, and marked in the catalogue by my name and that of Yarnold, as I was unwilling to disguise the fact of another hand having been concerned in its production, however much it was my own work. When it was returned to town, the owner of the picture was assured that the name of Yarnold was a fictitious one used by a poor artist who painted cheap pictures for the brokers. This it was that led to the picture being sent to the Academy with no other name than mine, as indeed it was entitled to bear alone.

From the evidence of this Mr. Yarnold—who under that name, which Heaven only knows is a real one now, was allowed to swear to the picture being his—I have been expelled the Academy, although I can prove that a certain picture of precisely the same subject reversed was in the hands of a pawnbroker at 234 Strand, with the name of Stanfield upon it, done to imitate the signature of that academician, which picture this Mr. Yarnold also claims as his work, and which, during the inquiry, I requested Mr. Stanfield to examine. I need not comment upon the veracity of an artist who does these things.

But in granting that the under picture was painted by a person named J. W. Yarnold, and admitting that I should have mentioned this in some way, which I sincerely regret not having done, what crime have I committed that should heap upon me so heavy and ruinous a punishment—a punishment which, on my conscience, I have never deserved, nor which can be supported by impartial justice? I have suffered severely from having stood my ground upon the sacredness of my word alone.

Reinagle was not satisfied with explaining his innocence, but afterwards endeavoured to prove that the academicians were the last people to be squeamish about an artist passing

off the work of other hands as his own. His narrative of his experience as an assistant and witness will be published next week.

## ARCHITECTURAL COMPETITIONS.

ON Monday evening Mr. Cole A. Adams read a paper at a meeting of the Leeds and Yorkshire Architectural Society on the subject of "Architectural Competitions." Mr. Adams began by calling attention to the importance attached to competition in England in all departments of life, and it was not surprising that buildings were not exempted. He then entered on architectural competitions, and showed that it would be better if architects endeavoured to reform the system. This could only be done by architects drawing closer together for mutual protection. Committees are incompetent to decide on the merits of rival designs. Experience has shown that it is rare to find a competition conducted fairly and honourably. So many interests are involved, and the love of exercising patronage is pleasant to the human breast; then the struggle for practice, and the desire to win a prize, no matter how, will turn men from the path of strict rectitude. If a man be determined to win, his best course will be to make the most showy design he can regardless of cost, to cultivate friends, to get the best information, and to open his purse-strings. Men who have acted differently are sure to complain; but let the winner keep judicious silence, and the matter will blow over. Competition is, on the whole, the fairest way to insure the best results and to decide between rival claims for employment; but in nine cases out of ten a better building would be erected and a world of heartburning would be saved by selecting a single architect who is possessed of the good opinion of the public and the profession. Mr. Cole Adams next described some of the evils that followed the selection of designs by competition, and said:—

It sometimes happens that a work or design of genius takes the first prize. The author turns out to be a young man, fresh from an architect's office, clever, accomplished, and artistic, but who has had very little practical experience. This is no unusual case. But is such a man quite the one to employ in the expenditure of public money? By the conditions of competition he ought to be employed, but building has to be studied as well as architectural draughtsmanship; and therefore, if our young architect succeeds in carrying out the building, he will add much to his store of information. Is there not a great risk that the public will have to pay for his education in the blunders he may make? Architects, after a few years' practice, know the pitfalls—the variations in estimates, the extraordinary proportion that omissions bear to extras, and how much knowledge is necessary to insure good building. How can a young man, fresh from an office, ignorant of all the ins and outs of building operations, inexperienced in the practical detail of his work, be expected to carry out, as it should be carried out, any building of importance? And yet what is to be done? Our young architect has fulfilled the advertised conditions, and in all fairness should have the job. With the ambition of youth he will rush in where angels fear to tread: somehow or other he will get through. By some good fortune he secures a good clerk of works, who is virtually the resident architect, and his quantity surveyor has written his specifications and thrown all responsibility on the contractor, and the solicitors have made the contract sufficiently binding to protect their client. Maybe all will go fairly well; but were the commission alluded to to extend their inquiries into such matters, what stories might not be told to harrow up our souls! In one case a competent man has been secured; in the other, a draughtsman, a maker of pretty designs, but incompetent in the most important details of his work—in fact, only half-educated. Better that such an one should bear the yoke in his youth than dress himself in borrowed plumes, bringing, by ignorance of his work, a stigma upon a profession which, from one cause or another, is ever having the blunders of incompetency cast upon it. Much of this obloquy arises from the rash and indiscriminate exercise of the competition system.

Then other results follow competitions. The local man—and I use the term in no invidious sense just now—flatters himself, may be, that he is above all things practical, but fears that he is rather backward in making a showy set of drawings. These he knows he can buy. He looks about him, consults a friend, or may be his professional journal, and then, lo! behold one day, seated in his office is a strange face, which in a day or so, as mysteriously as he came, disappears. A few weeks after a long row of drawings arrives, which makes the office excited and busy, and in due course a package is delivered to the place appointed by the promoters for sending in designs. The whole affair is so mysterious as to suggest ghostly interference. The winner of the prize is made public, and the local man is found to be he. Those who inspect the design are amazed at the cleverness of it—cannot think how Mr. — could make it, knowing what buildings he had before erected. Then there are



various rumours afloat, and mutterings deep and low, but our local friend cares for none of these signs. He knows perfectly well what he is about. In course of time the stool in his office is again occupied by the strange face. It is whispered, too, that he of the strange face is closeted daily with Mr. —, and then as mysteriously as he came he again disappears. Anon other parcels arrive by train or post, and the building is started. Mr. —'s balance is slightly reduced at his bank, the ghost is seen no more, but Mr. —'s fame is established.

If the ghosts would but tell the secrets of their prison-house, the skeletons unlock the doors and come out of their respective cupboards, what a howling, shrieking, and general confusion would ensue. Fortunately, perhaps, ghosts only walk the earth at night, when honest folk are in bed and asleep; and the skeletons have not got hold of the keys, or such discoveries would be made and such scandals be disclosed as would afford something more than a nine days' wonder. Better, on the whole, that the ghosts and skeletons should keep themselves to themselves.

While on the subject of ghosts and skeletons, let me disclose a secret—a plot which has borne some fruit, and which was devised and brought to a successful issue. The plot was against the demons of injustice—bribery, corruption, ignorance, stupidity, and all other like evils and their attendant results. Bear with me while I tell you the story of a movement and how it originated, which has some interest attached to it, and has been far-reaching in its results, though not achieving that full measure of success which its originators hoped for. On January 13 in the year 1880, a few architects met in the upper room of a house in the city of Westminster. These men were members of a small club or society for the exchange of professional books and ideas. One of the members had brought before the meeting a paper on architectural competitions, treating of the generally unfair way in which they were conducted. The author insisted upon the necessity of insuring justice by having a competent assessor. The meeting with enthusiasm endorsed the view, and swore "that the great race of architects should suffer wrong no more." A committee was appointed, consisting of the members of the little club and a few others. Ways and means were discussed, and it was determined to canvass the profession as to their views.

Mr. Street gave his advice and name to the movement, and that movement, you have doubtless guessed already, was for the purpose of obtaining one or more professional assessors of established reputation for every public architectural competition. The number who signed the memorial, presented by that great architect who now lies buried in the Abbey at Westminster, far exceeded what the promoters of the movement expected. Mr. Whichcord (who died recently) was President of the Institute when Mr. Street presented the memorial, and expressed his astonishment that so many architects were in existence. Gentlemen, all of you know about this movement. The outcome of the memorial was the appointment of the Competitions Committee by the President and Council of the Institute, and the recent issue of the form of agreement to architects throughout the United Kingdom. The number who have signed this undertaking is upwards of 1,420. I venture to say—and I have had more opportunities than many of judging—that, on the whole, much good has been accomplished and a larger measure of justice secured to the profession.

If I harp somewhat longer on this theme than to many is desirable, bear with me a little. From the first I have taken an active part in the movement, and the labour of accomplishing even what has been accomplished has not been light; and so you must concede something to a man with a hobby, and forgive any little tendency to magnify results and to degenerate into prosiness.

The principle upon which the memorialists insist is that in every public architectural competition a competent assessor shall be appointed in the interests of the profession and of the public also. I am as fully persuaded of the justice of this position as I was when the invitation was first issued to the profession to join in assisting upon it.

I wish some one with the ability to do it and the time at his disposal would tabulate the competitions which have recently taken place, and their mode of procedure and results. Such statistics would be most useful and instructive.

Now, let me tell you briefly what the Competitions Committee have done. Every architect in practice whose name and address we could obtain has been asked to sign the agreement as to the assessor, and we have upwards of 1,420 signatures. We have local honorary secretaries fifty-eight in number in all the chief centres and districts of the United Kingdom, whose duties consist in keeping the committee informed of what competitions are promoted in their respective neighbourhoods, and otherwise assisting the cause. Directly we hear that a competition has been inaugurated or is in contemplation, we send a circular letter to the promoters of the competition, explaining the views of the signees, and enclosing a copy of the "suggestions" issued by the Royal Institute of British Architects, and a list of those who have signed the

agreement. In the circular we state that we do not recommend the "dual" competition in works under 20,000*l.*, and we purpose making another suggestion to the effect that a circular should be sent to all competitors in a competition, by the promoters, embracing the replies sent to any inquirers up to a certain date, so that all may be placed on the same footing. The great thing of course is to get at promoters before they issue their instructions; and not long ago we endeavoured to meet this by a letter addressed to the editors of the principal London papers explaining the position architects had taken up, and, in addition to this, a circular letter has been sent to all the mayors and other public functionaries throughout the United Kingdom to the same effect. You will therefore see that strenuous efforts have been, and are being made by the Competitions Committee, of which one of your body, Mr. J. Barlow Fraser, is a most active and energetic member. I may add that the Competitions Committee decline to advise or suggest who should be the assessors in any competition. Up to the present time, of the number of promoters applied to, some 25 per cent. have appointed an assessor, so I do not think there is any reason to be discouraged. Reform is not to be effected in a short time, and the seed sown will bear fruit some day. One thing to me is a subject of disappointment, and, I confess, of surprise. Of those who signed the memorial, a very large proportion have, from some cause or other, refused or neglected to sign and support the very agreement they prayed might be set on foot. That is a position I cannot understand or appreciate. I was sanguine that all who signed the memorial would have supported this movement for securing justice, but I very much fear that some hold aloof hoping to secure an advantage thereby, and to go in for the gambling with reduced odds against them. Others refuse to sign on the ground that it savours of trades-unionism.

Mr. Adams then went on to speak of the working of the assessor principle, and said it was to be feared that it had sometimes failed from a want of judicial power. To expect infallibility was to expect too much. But was not an expert likely to be nearer the truth than a body of laymen? The appointment was proposed to be restricted to public competitions. In conclusion, a series of propositions was proposed as the result of architectural competitions.

In the discussion which followed, Mr. Birchall, Mr. Hill, Mr. Fraser, Mr. Connon, and Mr. Bulmer took part, and it was said that the dual system recommended by the Institute entailed enormous work on architects for the benefit of the assessors. Mr. Adams, in replying, said that the dual system was not proposed for works under 20,000*l.*, and he begged his auditors to give the assessor principle fair play.

## THE CASTLE OF GLASGOW.

A PAPER on the castle of Glasgow was read by Mr. George MacGregor at last week's meeting of the Glasgow Architectural Society. It was said that the beginnings of the castle of Glasgow were unknown, though it was probable that its growth had been gradual as the wealth and power of the bishops increased. The first mention of it was in the *Chartularium Glasguense*, under date 1228. In 1300 it was occupied by a strong body of English troops, who were in that year defeated by Wallace in what was known as the Battle of the Bell o' the Brae in the High Street. At that time it is supposed to have been a plain four-storeyed structure built of hewn stone, the walls pierced by several narrow windows, and surmounted by battlements. In all likelihood this building was then, as it was two centuries later, surrounded by a fosse, with drawbridge and portcullis. During the episcopate of Bishop Cameron, about the year 1438, a great tower was erected immediately to the south-west of the castle, and was a quadrangular building with embattled walls and crow-stepped gables. Archbishop Beaton, between 1508 and 1522, enclosed the whole within a wall 15 feet high, with a bastion at the north-western corner, and otherwise greatly strengthened the castle, which was now being regarded as one of the citadels of the west country. In the month of February 1515, Mure of Caldwell, one of the barons in league against the Regent Albany, stormed and carried the castle with artillery, but the Regent quickly levied troops and, after a short struggle, ejected Mure. The archbishop raised an action against the Lords of Council against Mure, who was ordained to return all the articles abstracted or pay their value, and to hand to the pursuer the sum of 200*l.* Scots in name of damage done to the structure during the siege. Two years later it was taken by the Earl of Lennox. During the episcopate of Archbishop Dunbar, a large stone gateway was erected at the portion of the wall near the entrance to the cathedral yard. In 1544, during the minority troubles of Queen Mary, the Earl of Lennox placed a garrison in the castle of Glasgow, and retired with the rest of his forces to Dumbarton. The Regent Arran marched to the western city, and for nine



days bombarded the castle with brass guns. On the tenth day the defenders surrendered on condition of quarter, but they were afterwards ruthlessly put to the sword, only two of them escaping. Having traced the part which the castle played in the Reformation movements in the west of Scotland, he detailed several other sieges to which it had been subjected, and quoted an entry from the Privy Council Registers of date March 20, 1573-74, in which "The Castell and Stepill of Glasgow" were spoken of as "ane of the principall keyis of the cuntrie." After this period the castle fell gradually into a decayed state, and about the middle of last century it was regarded as a quarry where the builders in the city could obtain stones for nothing. At last, in 1791, the ruins were entirely removed to make room for the Royal Infirmary, the Exchequer and the Court of Chancery having given the directors of that institution a grant of the ground. Of the old castle but few relics now remained. In the possession of the Glasgow Archæological Society was a walnut panel belonging to the internal decorations, presented to the Society in 1859 by the late Mr. Gabriel Neil; in the porch of St. Joseph's Roman Catholic Chapel, North Woodside Road, was a sculptured stone with the arms of Archbishop Beaton, which had evidently been carted away from the ruins a century ago, and which had been got by the clergy of St. Joseph's in a house they took down for the purpose of extending their chapel-house. For over a century two stones, exhibiting the royal arms and monogram of James V., and the paternal and episcopal arms of Archbishop Dunbar, which had formerly been placed in the gatehouse, were in the wall of a tenement in High Street; but a few years ago these were obtained by Sir William Dunbar, to build into the wall of his Wigtownshire residence. The paper was illustrated by a ground plan of the castle and its surroundings.

### GLASGOW ARCHITECTURAL ASSOCIATION.

THE last lecture of the session has been delivered by Mr. W. Paton Buchan, S.E., his subject being "Internal Plumber Work." There was a good attendance of members, and the Vice-President occupied the chair. Plumber work, Mr. Buchan said, was much less understood or lectured upon than the kindred subject of drains, about which, unfortunately, almost every one considers himself competent to judge; still, information by means of books, &c., was spreading, and slowly but surely ousting mere custom and rule of thumb. The appliances embraced within the paper's scope, and examined separately, comprised baths, basins and sinks, hot-water tanks, boilers and pipes, and finally water-closets. The important point of the water-supply service was considered, not only of cities such as Glasgow, where the drinking-water is obtained direct from the main, but also of situations where an intermittent supply necessitates cisterns, in which case special precautions must be taken to prevent contamination, and these the lecturer fully described. But even while in these latter circumstances he was fully alive to the reasonableness of waste-preventing apparatus being insisted upon by the various water companies, still the ordinary water-closet flush of two or three gallons was in his opinion quite insufficient. Stop-cocks, it was enforced, should be fitted within the house, readily accessible to the occupants, for at once turning off the supply in the event of a burst or overflow, while much time and trouble would be saved to the plumber called in for repairs if a notice of the exact position of the external stop-cock were affixed to the wall. The long-wished-for sanitary regulations now proposed by the Glasgow Corporation were almost without exception commended. These, if decided upon, will place Glasgow among the foremost in this respect. The compulsory use of the smoke test which these regulations propose Mr. Buchan considered good, as the best system of testing drains, and one which he himself had used for several years before its general employment.

Numerous illustrative diagrams were exhibited, as well as models, fittings, and some specimens of dangerously defective traps taken from old buildings. After remarks from various members, a hearty vote of thanks was awarded to Mr. Buchan.

### THE DUBLIN MUSEUM.

ON Tuesday Earl Spencer was present at the distribution of prizes to the students of the Metropolitan School of Art, Dublin, and, in the course of His Excellency's address, the following allusion was made to the new museum:—Since last year I am happy to think that we have at last seen the ground broken for this museum which we have all so longed for in this city. I have often before, when I was Lord-Lieutenant in former years, said how much I desired that a large museum in Dublin should be built and established. I have pointed out the great advantage it would be to all lovers of art in this country, and to the students in art who belong to Dublin

and to this school. I am happy to think that at last we have been able to realise our desires and our hopes. I must also congratulate Ireland and Dublin on the fact that among all the competitors for the designs the successful competitor was Mr. Deane, a distinguished architect belonging to this country. From what I have seen, the building that will be erected from his design will be a great addition to the architectural ornament of this city. When the museum is built, you in Dublin will have a very remarkable group of buildings and institutions collected together here about Leinster House. You will have in the centre those societies which have done so much to promote science and art, agriculture, and the fine arts in Ireland, not only by their meetings but by their teaching, and by the example which they set for the promotion of these objects. They are there located in one of the finest houses of which Dublin can boast—a house which does honour to the architectural taste of its former owners, the descendants of whom I am happy to think will shine in their liberality towards the arts in this country. On each side of this society will be grouped buildings and institutions to promote art in this country. You will have a magnificent public library, close to that you will have the Museum of Art, and beyond that you will have the National Gallery. I will venture to say that in that National Gallery there will be specimens of the finest sculpture to be found in the world, and you will have every year increasing in numbers admirable specimens of both the ancient and modern art of painting. On the other side of the Leinster House you will have the National History Museum, and above all, that new Museum of Art which has been referred to here so often. That group of institutions and buildings will be one of which any city in Europe may be proud. I believe that the people of Ireland and of Dublin are worthy of these institutions, and that they will avail themselves of the opportunities that they will present for the development of their taste and their intellect, and that a great impetus may be thus given to those who desire to acquire a knowledge of art in the professions to which they belong.

### ARCHÆOLOGY.

**The Jamaica Coffee House.**—The demolition has commenced of the celebrated old coffee-house called the Jamaica Coffee House, in St. Michael's Alley, Cornhill. This coffee-house was for many years the head-quarters of those who represented the shipping interest. The old lockers still remain which were used by the City magnates of a past age. A new and handsome building is about to be erected on the site, from the designs of Mr. Banister Fletcher, the accepted contract being 7,173*l*. A record of the past will be kept by painted windows, representing old scenes which have taken place within its walls, and the arms of the old City merchants. The rooms will be furnished with the old mahogany tables and chairs on which have sat Sir Thomas Gresham and other celebrities of a former age.

### CHURCH BUILDING AND RESTORATION.

**Christ Church, Stone, Staffordshire.**—This church was reopened with a dedication service on Saturday last, the 21st inst., after extensive additions and alterations. The church, which is a plain brick structure, was built about forty years ago. The old chancel, which was but 20 feet by 13 feet 9 inches, has now been removed, as also the former vestry, which was small and mean, and, having no external door, was entered from the church only. A great portion of the east wall of the nave has also been taken down. All the old pews have been cleared out, and the organ has been removed from the gallery. A new chancel, 30 feet long by 20 feet wide, has been built. This is 25 feet 6 inches high internally, and some 33 feet to the ridge of roof externally. It has a polygonal apse, five of the sides having windows, the heads of which are filled with well-executed tracery. The chancel roof, which has been much admired by those who have seen it, is composed of strongly-framed principals, with curved ribs rising from the walls some feet below the cornice. Those which rise from the angles of the apse are grouped at top around a moulded pendant, from which also springs a curved longitudinal central rib: the spandrels between the principal timbers and the curved ribs are filled with pierced tracery panels. The whole is divided and subdivided into compartments and panels by the principals, and by moulded ribs. There is also immediately above the cornice a series of curved braces, which is continuous along each side and round the apse. The organ is to be re-erected in a spacious organ-chamber, which has been built on the north side of the chancel, into which and the nave there are wide and lofty arches for the double front with which the organ is to be rearranged. The new vestry is upon the south side of chancel, and is commodious and lofty. The nave and western gallery



have been entirely re-seated with substantial and very comfortable seats of pitch pine, the seats in the nave being arranged in four lines with a central and side aisles; those in the gallery now face eastwards, and not, as formerly, partly north and south. In the chancel are handsome oak choir-benches with panelled fronts, an oak prayer-desk, and on both the north and south sides are stalls for the clergy. The pulpit is placed so as to form the termination of the low screen wall, by which the chancel has been extended into the nave somewhat beyond the line of the chancel arch above. The base is of Croxdon Abbey and Hazelstine red stone, similar to that used for all the other internal masonry; above this base the pulpit is of the finest Painswick stone and veined alabaster. In plan it is a semi-octagon of unequal sides, and it is panelled and richly traceried on four sides, and has a larger and smaller cornice above and below carved with foliage. All the external masonry is of Hollington stone. The heating apparatus has been entirely remodelled and improved, and has been extended to the chancel and vestry. The general works have been executed by Messrs. Lowe & Sons, of Burton-on-Trent, who also have supplied the pulpit and all the joinery, including the chancel-seats and prayer-desk. The gas-fittings have been manufactured by Messrs. Brawn & Co.; the brass chancel-rails, a new alms-dish, the frontal and cover of the communion-table, and other furniture are supplied by Messrs. Jones & Willis; and the heating apparatus has been remodelled and extended by Mr. Parkes, all of Birmingham. The chancel has been laid with encaustic tiles by Messrs. Minton, Hollins & Co., of Stoke-on-Trent. The whole has been carried out under the direction and from the designs of Mr. W. Hawley Lloyd, architect, of 79 Colmore Row, Birmingham.

**Harrington.**—The parish church has been reopened after restoration. Mr. W. Deighton, of Workington, was the architect. The contractors were Mr. G. P. Cook, masons' work; Messrs. Porter & Pearson, joiners' work; Mr. J. Lawson, plasterers' work; Mr. D. M. Walker, plumbing and gasfitting; Mr. J. Whitfield, slating; and Messrs. Sherwood & Armstrong, painting and glazing, &c., all of Workington. The building will now seat 656 persons, and the cost of the work, including furnishing, has been 1,700*l*.

**Holywell.**—The new church which has been erected at the Holywell Union has been opened. It is built in the Gothic style, from plans prepared by Messrs. Douglas & Fordham, architects, Chester, and will seat about 300 persons. The building is of local stone, with Runcorn dressings. Mr. T. W. Sibeon, Holywell, was the contractor.

**Smallthorne.**—A south aisle and other additions have been completed at Smallthorne church. There is additional room provided for 120 worshippers. The improvements have been carried out by Mr. N. Bennett, builder, the architect being Mr. G. B. Ford, of Burslem. The cost, about 1,000*l*., has been borne by Mr. R. Heath, of Biddulph Grange.

## NEW BUILDINGS.

**Blackburn Infirmary.**—The annual meeting of the Governors was held on the 12th inst. The report stated that the new wing is in thorough working order, the wards being bright and cheerful. The cost was 4,897*l*. 15*s*. 9*d*. The wing and lodges were erected by Messrs. Thomas Higson & Sons, from the plans and under the superintendence of Mr. A. W. R. Simpson, the architect to the Board. During the year, heavy extra expenditure has been incurred in a new steam boiler, hot-water apparatus, rearrangement of boiler-house, steam cavity cooking range, &c., mainly rendered necessary by the extension. It was stated that about three months ago the infirmary was examined by a deputation of eminent French physicians, who were commissioned by the French Government to inspect and report upon four hospitals in Great Britain. They visited one in London (St. Thomas's), another in Edinburgh, a third in Wales, and the fourth was the Blackburn and East Lancashire Infirmary. This showed that the reputation of the institution had travelled even to France. After a very careful survey, the French physicians were delighted with the infirmary. They expressed themselves in the highest terms of the building, and more particularly of its sanitary arrangements, which have been carried out during the past eleven years under Mr. Simpson's directions.

**Messrs. Archibald Smith & Stevens**, hydraulic engineers, of Queen's Road, Battersea, have been instructed to erect one of Stevens & Major's patent hydraulic suspended passenger lifts at Craven House, Northumberland Avenue. This will be worked by water supplied through the mains of the London Hydraulic Power Company.

## SCHOOL BUILDINGS.

**York.**—New Roman Catholic day schools, in connection with the mission of the English Martyrs at York, have been opened. The premises are situate in Blossom Street, and have cost 2,000*l*. They will accommodate 500 children. It is intended to erect a church in front of the school as soon as funds will permit. Messrs. Goldie, Child & Goldie, of London, have been the architects, and the contract has been carried out by Messrs. Biscoomb & Sons, York.

**Newton Heath.**—The foundation stones of a new Wesleyan chapel and Sunday school at Monsall, Newton Heath, have been laid. The school will seat 300 persons, and the chapel (which will be over the school) is designed to accommodate 450 persons. The building is to be of grey bricks with Ruabon terra-cotta dressings, and will be roofed with Velinelli slates. Mr. A. W. Smith, of Manchester, is the architect, and Mr. Owen Williams, of Moss-side, the contractor. The estimated cost of the building is 2,000*l*.

**West Kirby.**—The elementary schools which have been built at West Kirby, on a site near the old parish church, have been formally opened. Mr. Thomas Browne, of Tower Wharf, Chester, was the contractor, and the architect was the late Mr. William Kelly, also of Chester, who died but a short time before the contract was completed. The buildings are estimated to cost 3,118*l*., and are beautifully situated, commanding an excellent view of the Dee and the Welsh hills. The schools, which are after the old Cheshire style, built with half-timber gables and with tracery beams, are of Ruabon pressed brick, from the works of Mr. J. C. Edwards, and local red stone dressings. The roof is covered with Ruabon brindled tiles, and is surmounted by two turrets.

## GENERAL.

**Mr. Robert Thorburn, A.R.A.**, has retired on the honorary list of the Royal Academy.

**The Spring Exhibition** of the Derby Corporation Art Gallery opened on Saturday.

**The East Window** of Ewerby parish church has been filled with stained glass, as a memorial of the late Earl of Winchelsea and Nottingham. The work has been done by Mr. W. F. Dixon, of University Street, London.

**A Second Stained-Glass Memorial Window**, to be placed on the north side of the outer aisle of the nave of the Manchester Cathedral, has been promised to the Restoration Committee.

**Mr. Vicat Cole, R.A.**, has been elected a member of the Athenæum Club under the special rule.

**Mr. Charles Bell, F.R.I.B.A.**, has been appointed architect for the Abingdon Cottage Hospital and the Endowed School at Longton.

**A Red Sandstone Wall**, believed to be a portion of the old Priory Chapel wall, has been discovered in Corporation Street, Birmingham.

**Mr. W. J. Wood**, architect, of Finsbury Pavement, is preparing plans and estimates for the restoration of the south aisle of Great Burstead church, including the old west window, which was destroyed.

**The University of Oxford** has granted 1,050*l*. for improvements on the Ashmolean Museum, but it is probable that the money will be expended without the superintendence of an architect.

**The Members** of the Edinburgh Architectural Association on Saturday visited the new prison buildings of Calton Gaol, Edinburgh. Permission for the visit was granted by the Home Secretary, on condition that no notice of the visit should appear in the public journals.

**The Aberdeen Corporation** proposes an extension of the water supply by the construction of two new reservoirs, which, with the necessary new buildings and machinery, is estimated to cost 35,000*l*.

**Messrs. Clark, Bunnett & Co., Limited**, engineers, of Rathbone Place, W., have received instructions from the War Office to erect and ship in fourteen days, thirteen corrugated iron buildings for stores, for service in the Soudan, covering an area of about 25,000 super feet.

**The American Elevator Company**, of Old Jewry, E.C., have been instructed to furnish one of their standard hydraulic elevators in the Alexandra Home, which is being erected in connection with the Royal College of Music, as a residence for those of the lady students of the college whose homes are out of London. This home is being erected under the patronage of H.R.H. the Princess of Wales, and the work is being carried on under the supervision of Sir Philip Cunliffe Owen.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, FEBRUARY 28, 1885.

## CONTRACT PLANS.

AN action was brought at the Liverpool Assizes last week by Mr. William Christian, a builder and contractor, against Samuel C. Ridley, the owner of some property situated near Bidston Road, Birkenhead, to recover the price of work done in making a road and laying down a sewer. The defendant pleaded that the work was done under a contract by which the money was not to be paid until the contract was completed; that the contract had not been completed; that the work had not been done to his satisfaction; and that he had in fact paid plaintiff more than the contract price. After the contract for the work had been signed it was found that the Birkenhead Corporation would not approve of the plan of the sewer as it had been originally prepared. This necessitated a delay, and a new plan had to be drawn up, according to which the sewer had to be made considerably deeper than specified in the contract, which involved extra work. For the defence it was contended that there was no material difference between the two plans, and that the work had not been done to the satisfaction of the defendant. Mr. Justice Day submitted several questions to the jury, which were answered as follows:—Was the contract of December 18, 1883, based on the new or on the old plan? The jury: On the old plan. Did the defendant represent to the plaintiff, pending the negotiations, that the old plan had been submitted to and approved by the Corporation? Yes. Did the defendant know that to be untrue? Yes. Did he make the representation for the purpose of inducing the plaintiff to enter into the contract? Yes. Did the defendant in January agree to pay for the extra work rendered necessary by the adoption of the new plan? He did. Judgment was accordingly entered for the plaintiff on all the points in dispute.

## THE NEWBURY JOINERY AND MOULDING MILLS.

EARLY on last Saturday morning the whole of the Albert Steam Joinery Works and Moulding Mills at Newbury, the property of Mr. Samuel Elliott, were completely destroyed by fire. The works were situated at the north of the town, and occupied several acres. The true origin of the fire is unknown, but it is supposed the bearings got heated, and the conflagration was terrible. The destruction to the machinery alone is estimated at 8,000*l*. The immense piles of burning timber made the scene to the west a grand but awful sight, the flames reaching 250 feet in height. The masses of burning stack sheds covering acres was a terrible sight. The engines happily did not explode, the safety-valves being open. The loss is estimated at between 25,000*l*. to 30,000*l*., and included a vast stock of mouldings and joinery which were ready to be despatched to different parts on the same morning. The glare was seen at Wootton Bassett, six miles west of Swindon, being a distance of nearly forty miles. Policies were effected with the Lancashire and Liverpool,

London, and Globe Insurance Companies. Mr. Elliott is also a large building contractor, having lately commenced several contracts, and employing many hundreds of men. In this branch the losses included a large quantity of valuable plant and a traction engine and seven trucks, valued at 1,500*l*.

## BUILDING LAND AT LEWISHAM.

THE result of a sale which was held at the Plough Inn, Lewisham, on Monday evening last, by Mr. Richard J. Collier, showed that building land in that locality is at present increasing in value. The property submitted comprised the second portion of the Priory estate, at Lewisham, which was offered in sixty-nine lots. Before the commencement of the sale Mr. Collier made an interesting statement to the effect that the Priory mansion had been subdivided into two houses, and that in consequence the historical old structure would be preserved in laying out the estate for building purposes. One-half of the mansion had been sold previous to the present sale. The sale commenced on Monday with active bidding, and there was a spirited competition for the whole of the lots, all of which, with the exception of eight, were sold at prices much better than those obtained at the previous sale; the front lots, containing 18 feet frontage with a depth of 100 feet, selling for 150*l*. each, whilst the majority of the back lots realised about 4*l*. per foot frontage. The kitchen garden, and the remaining portion of the mansion, were bought in. The total proceeds of the sale amounted to 5,000*l*.

## AUCTION SUMMARY.

For the Week ending March 7.

(See Advertisements.)

TUESDAY, 3rd:—

Messrs. Horne, Eversfield & Co.—Corrugated Iron Buildings. New Cross.

WEDNESDAY, 4th:—

Messrs. Foy, Morgan & Co.—Timber. Baltic Sale-room.

THURSDAY, 5th:—

Messrs. Farebrother, Ellis, Clark & Co.—Freehold Building Site, Vine Street, Clerkenwell.

FRIDAY, 6th:—

Messrs. Frank Lewis & Co.—Freehold Land, with Brick Earth. The Mart, Tokenhouse Yard.

## APPOINTMENTS VACANT.

NORWICH.—The County Magistrates will meet at noon on Saturday, March 7, to elect a Surveyor, to combine the offices of County Surveyor and County Road Surveyor, held respectively by the late Mr. R. M. Phipson and Mr. R. M. Brereton, resigned. Mr. Charles Foster, Clerk of the Peace, Shirehouse, Norwich.

## COMPETITIONS OPEN.

COLCHESTER.—March 25.—Designs are required for Remodelling and part Rebuilding the Cups Hotel. Mr. H. H. Elwes, Secretary, Exchange and Cups Hotel Company, Colchester.

CROYDON.—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100*l*., 30*l*., and 25*l*. for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

WINDSOR.—Feb. 28.—The Town Council of New Windsor invite designs for a panel of tapestry to be fixed in the Guildhall. Three prize-winners will be invited to compete for the cartoon from which the panel of tapestry will be woven. The Town Clerk, 4 Park Street, Windsor. Competitors must be resident within five miles of the Guildhall, Windsor.

WOLSTANTON.—March 2.—Plans are required for School and Caretaker's House. Mr. Henry Farmer, School Board Offices, Tunstall.

## CONTRACTS OPEN.

ABERDARE.—March 9.—For Building 100 Cottages. The Powell-Duffryn Steam Coal Company, Aberaman Offices, Aberdare.

ABERDEEN.—March 7.—For Building Dwelling-houses at Auchentumb, Stricken, and other Places; also Offices, &c. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

BANFF.—March 11.—For Building Dwelling-house for Mr. A. Watt, Solicitor. Messrs. Matthews & Mackenzie, Architects, 225 Union Street, Aberdeen.

BARTON-UNDER-NEEDWOOD.—March 9.—For Building Board Schools. Messrs. Giles & Brookhouse, Architects, Derby.

BATTERSEA.—March 5.—For Construction of Temporary Timber Foot Bridge over the Thames, and Removal of Old Bridge. The Engineer, Metropolitan Board of Works, Spring Gardens, S.W.

BELFAST.—March 12.—For Building Sheds and Structures for Agricultural Show. Mr. W. Hastings, C.E., Victoria Hall, Belfast.

BIRKENHEAD.—March 2.—For Building Insane Wards at the Workhouse. Messrs. Holt & Wise, Architects, 4 Water Street, Liverpool.

BRAEMAR.—March 3.—For Building Public Hall. Messrs. Pirie & Clyne, Architects, 123½ Union Street, Aberdeen.

BRAY.—March 1.—For Extension of Concrete Sea Wall and Promenade (602 yards). Mr. P. F. Comer, C.E., 37 College Green, Dublin.

BUCKIE.—March 7.—For Building Shop and Residence. Messrs. Bruce & Sutherland, Architects, Banff and Buckie.

CONNAN'S QUAY.—For Erecting Building at Cemetery for storing Hearse, Tools, &c. Mr. Clement W. Tibbits, Clerk to the Burial Board, Connaught Quay.

COXLIDGE, NEAR NEWCASTLE-ON-TYNE.—March 3.—For the Erection of Two Additional Wings, each for about 75 patients, together



with Enclosure Walls, and Alterations to the City Lunatic Asylum. Names and addresses, with deposit of 3 guineas, to be sent to Mr. John Atkinson, Solicitor, Newcastle, Clerk to the Visiting Justices, on or before March 3. Mr. Arthur B. Plummer, Architect, 46 Cloth Market, Newcastle-on-Tyne.

DELPH.—March 2.—For Building Twelve Houses. Mr. A. Banks, Architect, 46 Union Street, Oldham.

DERBY.—March 9.—For Alterations and Fitting-up Additional Slipper Baths at Public Baths. Mr. Thomas Coulthurst, Borough Engineer, Municipal Offices, Babbington Lane, Derby.

DEVON.—For Alterations to Stables, Spriddlestone House, Brixton. Mr. J. R. T. Kingwell, Great Aish, South Brent, Devon.

ELGIN.—March 2.—For Building House, with Enclosing Walls and Railings. Messrs. A. & W. Reid, Architects, Elgin.

FARNHAM.—March 23.—For Construction and Maintenance of Main Sewers (Five Miles), Flushing Tanks, Storage Reservoirs, Engine and Boiler House, Pumping Main, Preparation of Land, &c. Mr. James Lemon, C.E., 62 Palace Chambers, Westminster, S.W.

FOLESHILL.—March 7.—For Extension of Playground, Walling, Paving, Surface Draining, &c. Mr. J. Ashley, Clerk to the School Board, Foleshill.

GLASGOW.—March 3.—For Covering Portion of Cattle Market, Graham Square. The City Architect, 74 Hutcheson Street, Glasgow.

GLASGOW.—March 11.—For Supply and Delivery of Malleable Iron Pillars, Roofing Materials, Framing Sheets, &c., for the Workshops, Engine and Car Sheds, for the Singapore Tramways Company (Limited). Mr. John Strain, C.E., 154 West George Street, Glasgow.

GOOLE.—March 10.—For Test Boring for Water. Mr. Tudor, C.E., Market Hall Chambers, Goole.

GORLESTON.—March 11.—For Alterations to the Barking Fishery. Mr. H. Dudley Arnott, Architect, High Street, Gorleston.

HALIFAX.—March 10.—For Re-erection of Hare Street Mill and Shed. Mr. J. Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

HEREFORD.—March 3.—For Building Villa. Mr. W. W. Robinson, Architect, 21 King Street, Hereford.

HEXHAM.—March 7.—For Laying Cast-iron Pipes (4,000 yards), 3-inch and 4-inch, with Valves, Hydrants, &c., and for Construction of Covered Service Reservoir; also for Supply of 2,240 yards of 4-inch and 1,760 yards of 3-inch Cast-iron Pipes, Sluice Valves, and Hydrants or Fire Plugs, with Casings complete. Mr. Hubert Laws, C.E., 18 Grainger Street West, Newcastle-on-Tyne.

HOLBECK.—March 3.—For Building Eight Houses. Mr. J. Evers, Architect, 20 Bond Street, Leeds.

HORNCastle.—March 2.—For Works of Restoration at Workhouse. Mr. C. Dee, Clerk to the Guardians, 14 South Street, Horncastle.

KIDDERMINSTER.—March 9.—For Cast-iron Socket Pipes, and Special Castings for Waterworks. Mr. E. Pritchard, C.E., 2 Storey's Gate, Westminster, and 37 Waterloo Street, Birmingham.

KILWINNING.—March 9.—For Construction of Brick Gasholder Tank and Gasholder. The Engineer, Gasworks Company, Kilwinning.

LIVERPOOL.—For Building Pair of Semi-detached Villas at Hale Bank. Messrs. Isitt & Verity, Architects, Wallgate, Wigan.

LLANELLY.—For Additions to Bryncaeran. Mr. Griffiths, Surveyor, Thomas Street, Llanelly.

LONDON.—For Finishing Four Small Houses. Mr. G. Miller, 49 Halton Road, Canonbury, N.

LUSTLEIGH.—March 10.—For Building House at Mapstone. Mr. T. Amery, South Harton, Lustleigh, Devon.

LUTON.—March 9.—For Supplying and Fixing Engine, Pump and Boiler Plant, at Sewage Works. Mr. W. H. Leete, Town Hall, Luton.

MORLEY.—March 6.—For Building Chapel. Mr. T. A. Buttery, Architect, Paragon Buildings, Queen Street, Morley.

MONTROSE.—March 5.—For Supplying and Erecting a Steam-engine and Pump. Mr. John Anderson, C.E., Burgh Surveyor's Office, Montrose.

NETHERMILLS.—March 6.—For Building Dwelling-house and Farm Steading. Messrs. Bruce & Sutherland, Architects, Banff and Buckie.

NORDEN.—For Building Congregational Schools. Messrs. Butterworth & Duncan, Architects, South Parade, Rochdale.

NOTTINGHAM.—March 2.—For Supply of Fittings to Post Office. The Postmaster, Nottingham. Mr. A. B. Mitford, H.M. Office of Works, S.W.

PADDINGTON.—March 2.—For Construction of Brick Sewer and Works in Connection The Surveyor, Vestry Hall, Harrow Road, W.

PARBOLD.—March 3.—For Building Country Residence. Messrs. Isitt & Verity, Architects, Wallgate, Wigan.

PLYMOUTH.—For Building Boundary Wall Bath Street. Messrs. Pearse Bros., Coach Factory, Bath Street, Plymouth.

RICHMOND.—For Constructing Gasholder. Mr. T. May, Engineer, Gasworks, Richmond Surrey.

ROCHDALE.—March 4.—For Alterations to Gasholder Tank. Mr. T. B. Ball, Manager Gasworks, Rochdale.

SANDWICH.—March 3.—For Building School. Mr. Beal, Chain, Sandwich.

SHEFFIELD.—March 4.—For Boundary Wall, Gates, &c., to Central Depot. Mr. Robert Davidson, C.E., Borough Surveyor, Bowe Spring, Sheffield.

SHREWSBURY.—March 10.—For Building Residence. Mr. R. Lloyd Williams, Architect, Park Lane, Denbigh.

STANNINGLEY.—March 2.—For Converting Premises into Houses. Mr. C. S. Nelson, Architect, Albert Chambers, Park Row, Leeds.

TUNSTALL.—March 2.—For Building Board School and Caretaker's House at Brindley Ford. Mr. H. Farmer, Clerk to the School Board, Tunstall.

# R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.  
INVENTOR and PATENTEE of the  
SAFETY WINDOW WITH REVERSIBLE SASHERS

FOR

## INEXPENSIVE & PERPETUAL CLEANLINESS

Which has gained at the INTERNATIONAL HEALTH and  
SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
and 16 Diplomas of Merit.

The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

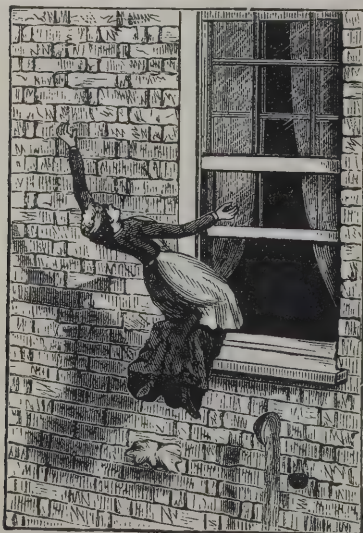
The present representatives are:—

Barnstaple  
Belfast and 10 miles round  
Bournemouth and 10 miles round  
Brighton and 8 miles round  
Bristol and 20 miles round, and  
Gloucestershire, Somerset, Dorset,  
Wilts, Mon., Glamorganshire  
Dublin and 20 miles round  
Dundee and 30 miles round  
Edinburgh  
Exeter and 20 miles round  
Glasgow and 30 miles round  
Gloucester and Cheltenham

Hancock, Pilton Street.  
W. J. Watson, Royal Avenue, Belfast.  
H. W. Jenkins & Son, Builders.  
Cheesman & Co., Kensington Street.  
Brock & Bruce, Albert Road, St. Phillip's.  
J. & W. Beckett, 28 South King Street.  
Stewart Robertson, 34 Bank Street.  
W. R. Comings, 45 Longbrook Street.  
Baird, Thompson & Co., 24 Bath Street.  
The Sanitary and Economic Association.

Hastings  
Hereford and 5 miles round  
Hilfrcombe  
Leeds and 5 miles round  
Liverpool  
Ludlow and Leominster  
Newton Abbott and 10 miles round  
Nottingham and 15 miles round  
Reading and 5 miles round  
Southampton and 7 miles round  
Sunderland and 10 miles round  
Torquay and 5 miles round

Taylor Bros., Builders.  
C. Lawrence, 41 Portland Street.  
W. Jones, 4 Osborne Road.  
John Wm. Lewes, 65 Albion Street.  
Evan Griffiths & George Finning, Sefton Works, Miles Street.  
J. Grosvenor, Ludlow.  
Parker Bros., Courtnay Street.  
Henry Vickers, Welford Road.  
Driver & Co., St. Mary Saw Mills, Southampton.  
C. & W. Watson, Union Street.





**WANDSWORTH.**—March 3.—For Making-Up Roads. Mr. H. G. Hills, Clerk to the Board of Works, Battersea Rise, S.W.

**WIGAN.**—For Building Villa. Messrs. Isitt & Verity, Architects, Wallgate, Wigan.

**WIGAN.**—For Building Pair of Terrace Houses. Messrs. Isitt & Verity, Architects, Wallgate, Wigan.

**WINDERMERE.**—March 3.—For Additions to Ellerthwaite, for Mr. V. Moore, C.B. Mr. Stephen Shaw, Architect, Kendal.

**WORTLEY.**—March 2.—For Additions to Workhouse Infirmary. Mr. G. A. Wilde, Architect, Bank Street, Sheffield.

**WREXHAM.**—March 18.—For Building Hospital for Infectious Diseases (Administrative Department, two Pavilions, Isolation Wards, &c.) Mr. A. C. Baugh, C.E., Egerton Street, Wrexham.

**YARMOUTH.**—Feb. 28.—For Building House. Mr. C. G. Baker, Architect, St. George's Plain, Great Yarmouth.

*\*\* See last week's issue of "The Architect" for a number of Contracts still open.*

## TENDERS.

### ASHFORD.

For Building House, The Chestnuts, and Stabling, at Ashford, Middlesex, for Mr. J. Coppen. Quantities supplied.

|                  | House      | Stabling. |
|------------------|------------|-----------|
| Gibson, Southall | £2,947 0 0 | £500 0 0  |
| Staines & Son,   |            |           |
| London           | 2,858 0 0  | 520 0 0   |
| Goodman, London  | 2,830 0 0  | 500 0 0   |
| Richardson, New  |            |           |
| Hampton          | 2,719 0 0  | 528 0 0   |
| Lucas & Son,     |            |           |
| London           | 2,689 0 0  | 496 0 0   |
| Johnson, Wands-  |            |           |
| worth            | 2,635 0 0  | 465 0 0   |
| KEARLEY, Ux-     |            |           |
| bridge*          | 2,624 0 0  | 460 0 0   |

\* Accepted.

### ABINGDON.

For Erecting a new Office in East Street, Helen's Street, Abingdon, for Messrs. Sedgfield & Pryce, Solicitors. Mr. JNO. GEO. T. WEST, Architect, Abingdon.

BARRETT, Abingdon (accepted) . £146 0 0  
Lowest of two tenders received.

For Alterations and Repairs at a House in Bridge Street, Abingdon, for Miss E. Mundy, of the Manor House, Culham. Mr. JNO. GEO. T. WEST, Architect, Abingdon.

|                             |          |
|-----------------------------|----------|
| Walter, Oxford              | £320 0 0 |
| Dover, Oxford               | 290 0 0  |
| Williams, Abingdon          | 289 0 0  |
| Hunt, Abingdon              | 279 0 0  |
| Thatcher, Abingdon          | 260 0 0  |
| STROUD, Abingdon (accepted) | 256 0 0  |
| Barrett, Abingdon           | 220 0 0  |

For Alterations and Repairs to the Butchers' Arms Inn, Uffington, for Messrs. T. & J. W. Townsend, Brewers and Maltsters, of Abingdon. Mr. JNO. GEO. T. WEST, Architect, Abingdon.

|                              |          |
|------------------------------|----------|
| Willis, Faringdon            | £405 0 0 |
| Shepherd, Faringdon          | 400 0 0  |
| Parker, Faringdon            | 376 6 0  |
| Aldworth, Hanney             | 371 11 6 |
| W. & J. Wheeler, Hanney      | 295 0 0  |
| J. Wheeler, Wantage          | 289 1 6  |
| Williams, Abingdon           | 279 0 0  |
| BARRETT, Abingdon (accepted) | 260 0 0  |

### ACCRINGTON.

For Building Residence, Whalley Road, Accrington, for Mr. James Cunliffe. Messrs. STONES & GRADWELL, Architects, Richmond Terrace, Blackburn.

Cunliffe & Son, Accrington, mason and brickwork.

Parker, Accrington, carpenter and joiner.  
Whitehead, Accrington, flagger and slater.  
Croushaw, Accrington, plasterer.  
Walsh & Son, Blackburn, plumber.  
Lowe, Bolton, concrete work.

### BARNESLEY.

For Building new Warehouse, Offices, &c., for the Barnesley British Co-operative Society.

Central Offices, &c.

|   |            |
|---|------------|
| Taylor & Sons, mason                              | £2,800 0 0 |
| Wilkinson, Barnesley, joiner                      | 790 0 0    |
| Hutchinson Bros., Barnesley, plumbing and glazing | 285 0 0    |
| Fenwick, Barnesley, plastering                    | 115 0 0    |
| Executors of the late Mr. Fleming, slating        | 75 10 0    |
| Fletcher, painting                                | 32 0 0     |

Warehouse.

|                                 |            |
|---------------------------------|------------|
| Squire, Barnesley, mason        | 1,691 16 0 |
| Smith, Gawber, joiner           | 790 0 0    |
| Needham Bros. & Brown, ironwork | 312 12 0   |
| Rushforth, Barnesley, plumbing  | 139 15 0   |
| Casey, Barnesley, slating       | 90 0 0     |
| Stephenson & Son, painting      | 22 3 6     |
| Lindley, Barnesley, plastering  | 10 0 0     |

For Raising the Wall at the Cemetery, and Completing Tune Street and Pindar Oaks Street. Mr. J. H. TAYLOR, Borough Surveyor.

Tune Street.

|                          |          |
|--------------------------|----------|
| Raynor & Sons            | £814 0 0 |
| Cooper                   | 800 0 0  |
| TAYLOR & SONS (accepted) | 730 3 0  |

Pindar Oaks Street.

|                          |         |
|--------------------------|---------|
| Cooper                   | 830 0 0 |
| Raynor & Sons            | 820 0 0 |
| TAYLOR & SONS (accepted) | 760 0 0 |

Cemetery Wall.

|                   |         |
|-------------------|---------|
| Taylor & Sons     | 126 3 0 |
| Raynor & Sons     | 120 0 0 |
| Taylor            | 109 2 0 |
| Cooper            | 75 0 0  |
| LAWTON (accepted) | 73 11 0 |

All of Barnesley.

### BLACKBURN.

For Building Stables behind the Exchange, Blackburn, for the Exchange Company, Limited. Messrs. STONES & GRADWELL, Architects, Richmond Terrace, Blackburn. Ibbotson, Blackburn, builder. Lowe, Bolton, concrete work.

# RENDLE'S ACME GLAZING

(REGD)

Patentees:—**W. E. RENDLE & CO.,**  
3 WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON.

### GALVANIZED CORRUGATED PITCHED ROOF



### IRON ROOFING.

HAY SHEDS, BUILDINGS, CHURCHES, SCHOOLS, MISSION ROOMS.

### GALVANISED IRON SHEETS.

Felt Tanks, Fencing, Eaves, Gutters, Down Spouts, Nails, &c.

**E. F. BLAKELEY & CO.,**  
25 Hatton Garden, Liverpool.

### SALES BY AUCTION.

**FOY, MORGAN & CO.** beg to announce that their Next PUBLIC AUCTION will take place on

WEDNESDAY, MARCH 4, 1885,

at the BALTIC SALE-ROOM, Threadneedle Street, E.C., when they will offer their usual assortment of DEALS, BATTENS, BOARDS, TIMBER, &c.

Catalogues will be issued in due time.

**FOY, MORGAN & CO.** {Wood Brokers, 108 Bishopsgate Street Within, E.C.

### TO BUILDERS AND SPECULATORS.

A part without reserve. Hyde-side, Edmonton (near Edmonton Station, the parish church, and the High Road, with tram route).

**MR. RICHARD J. COLLIER** will SELL by AUCTION, at the Auction Mart, on Friday, March 13, at One for Two o'clock, in Lots, absolutely without reserve, 23 carcases, situate in Stanley and Tiltotson Roads; also, at nominal reserves only, 10 long Leasehold Residences, Nos. 1 to 19 (odd numbers) Tiltotson Road, and three pairs of semi-detached Villa Residences, Nos. 21 to 23 Queen Anne's Villas, Hyde-side Road, Edmonton, a pleasant and healthy position overlooking the grounds of the Edmonton Cricket Club.

May be viewed, and particulars, with conditions of sale, had at the Mart; of Messrs. Sankeys, Flint & Sankey, Solicitors, Cecil Square, Margate; and of the Auctioneer, 25 Finsbury Pavement, E.C.

### WOOD GREEN.

Chitt's Hill Park Estate, commandingly situate near several railway stations. Payments extending over nine years. Free conveyances.

**MR. RICHARD J. COLLIER** will SELL by AUCTION, at the Nightingale Hotel, Wood Green, on Wednesday, March 11, at Six for Seven o'clock in the evening, 36 lots of valuable FREEHOLD BUILDING LAND, with frontages to Maryland Road, leading out of the main Southgate Road, offering capital sites for the erection of villa residences, which are in demand.

Plans and particulars may be obtained at the place of sale; of Messrs. Best, Webb & Templeton, Solicitors, 6 Essex Street, Strand; of A. T. Hawkins, Esq., 22 Budge Row, E.C.; and of the Auctioneer, 25 Finsbury Pavement, E.C.

### RESULT OF SALE AT LEWISHAM.

**MR. RICHARD J. COLLIER** begs to announce that of the Sixty-seven Plots of FREEHOLD BUILDING LAND offered by Auction on Monday Evening, Sixty Plots were Sold. The kitchen garden and portion of mansion were bought in, and may now be treated for on easy terms. Offices—25 Finsbury Pavement, E.C.

### Periodical Sale of Marble Chimney-pieces and Fenders.

**MR. JAMES POUSTY** will SELL by AUCTION, at the Marble Stores, 9 Castle Street, Holborn, on Tuesday, March 3, at One, an extensive Stock of MARBLE CHIMNEYPIECES, also a quantity of Marble Fenders, Tile Hearths, Stoves, &c. On view. Catalogues of the Auctioneer, 9 Castle Street, Holborn.

### CITY OF LONDON.

St. Paul's School, and 35 St. Paul's Churchyard.

**MESSRS. DANIEL SMITH, SON & OAKLEY** have received instructions from the Worshipful Company of Mercers to LET by AUCTION, at the Auction Mart, Tokenhouse Yard, Lothbury, E.C., on Tuesday, March 21, 1885, in one Lot, on lease for a term of 42 years, the very important, substantial, and extensive premises at the east end of St. Paul's Churchyard, which have been for so many years occupied by St. Paul's School, together with the adjoining corner house, No. 35 St. Paul's Churchyard. These premises occupy a position which is almost unrivalled in the City of London, having extensive frontages to St. Paul's Churchyard and Old Change, and also a frontage to Watling Street, and having the great advantage of first-rate light, especially on the Churchyard side.

The premises occupied by the School and the Masters' houses are extremely strongly and well built, with a fine Classic façade in stone.

The premises are well adapted for any Public Institution requiring a prominent situation and a large building. They are capable of conversion and alteration for commercial purposes, and with the addition of the corner House, No. 35, form such a block of premises as is seldom to be met with in the heart of the City.

The total area is about 10,000 square feet.

Full particulars, with plans of the premises, may be obtained on application to John Wanney, Esq., at the Clerk's Office, Mercers' Hall, Ironmonger Lane, E.C.; of George Barrow Williams, Surveyor to the Company, Mercers' Hall; at the Auction Mart; and of the Auctioneers, 10 Waterloo Place, Pall Mall, S.W.

Very valuable piece of Freehold Land, containing first-class brick earth of very considerable depth.

**MESSRS. FRANK LEWIS & CO.** will SELL by AUCTION, at the Mart, Tokenhouse Yard, E.C., on Friday, March 6, at Two o'clock precisely, a very valuable piece of FREEHOLD LAND, comprising 3½ acres. It adjoins the Chequers Inn, Woodburn Common, Bucks, and the well-known brickfield, carried on for many years by Mr. Billinghurst, and contains brick earth of high quality, believed to be about 40 feet in depth, thus affording supply for very many years to come for a new brickfield. The property is within one mile of the Woodburn Green and Bourne End Stations on the Maidenhead and Oxford branch of the Great Western Railway, and about thirty miles from London.

Particulars may shortly be had of Messrs. Darvill, Darvill & Last, Solicitors, Windsor; and of Messrs. Frank Lewis & Co., Land and Estate Agents, 95 Gresham Street, London, E.C.

[For remainder of Auctions, see page xl.]



**BATLEY.**

For Building Five Terrace Houses, Bath Street, Batley, for Mr. J. W. Blackburn. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley. Quantities by the Architect.

*Accepted Tenders.*

|   |          |
|---|----------|
| J. & D. Oldroyd, Batley, mason                | £905 0 0 |
| Kaye & Scates, Batley, joiner                 | 425 11 0 |
| Metcalf & Lockwood, Heckmond-wicke, plasterer | 98 0 0   |
| Thornton, Shipley, slater                     | 75 0 0   |
| Jessop, Batley, plumber                       | 34 0 0   |

Total . . . £1,537 11 0

**BRISTOL.**

For Lodge, St. Agnes Park, Bristol, for the Rev. J. M. Wilson, M.A. Mr. C. F. HANSOM, Architect.

|                           |           |
|---------------------------|-----------|
| Bale & Westlake           | £488 14 4 |
| Pugsley                   | 485 0 0   |
| Howell & Sons             | 462 0 0   |
| Perrott                   | 458 0 0   |
| Bastow                    | 453 6 0   |
| Cowlin & Son              | 450 0 0   |
| Williams & Prosser        | 450 0 0   |
| Veals                     | 445 0 0   |
| Gorvett                   | 447 0 0   |
| Davis                     | 444 0 0   |
| E. & T. Hatherley         | 440 0 0   |
| Lewis                     | 435 0 0   |
| Eastbrook & Sons          | 431 0 0   |
| Wilkins                   | 421 0 0   |
| Hayes                     | 415 10 0  |
| James                     | 409 0 0   |
| Thomas                    | 400 0 0   |
| WILKINS & SONS (accepted) | 385 0 0   |

**EBBW VALE.**

For Building Schoolmaster's House, Briery Hill, Ebbw Vale. Mr. W. S. WILLIAMS, Architect, Tredegar.

|                    |           |
|--------------------|-----------|
| D. Morgan          | £435 12 0 |
| Stephen & Davies   | 393 0 0   |
| E. Morgan          | 307 10 0  |
| LEONARD (accepted) | 270 0 0   |

**CARDIFF.**

For Erection of Villa Residence and Stabling at Rumney, for Mr. D. Cadogan. Mr. S. ROONEY, Architect, Cardiff.

CADOGAN (accepted) . . . £950 0 0

**CHESHAM.**

For Building Congregational Chapel and School, Chesham, including allowance for Old Chapel, for Building Committee, Messrs. HABERSON & FAWCKNER, Architects, 38 Bloomsbury Square, W.C. Quantities by the Architects.

|  |            |
|--|------------|
| Patman & Fotheringham, Theobald's Road | £3,125 0 0 |
| Groom, Dulwich                         | 2,977 0 0  |
| Burman & Sons, London                  | 2,797 0 0  |
| Orchard, Banbury                       | 2,707 0 0  |
| R. & E. Evans, Peckham                 | 2,578 0 0  |
| Gibson, High Wycombe                   | 2,485 0 0  |
| Peters, Horsham                        | 2,323 0 0  |
| Monk, Boxmore                          | 2,320 0 0  |
| Darlington, Chesham                    | 2,310 0 0  |
| Snell, Maidenhead                      | 2,305 0 0  |
| Haynes, Harrow                         | 2,250 0 0  |
| Jones & Co., Gloucester                | 2,217 0 0  |
| Carless & Co., Richmond                | 2,212 0 0  |
| Taylor & Grist, Aylesbury              | 2,166 0 0  |
| Fincher & Smith, Tring                 | 1,994 0 0  |
| Allen & Sons, Kilburn, N.W.            | 1,950 0 0  |
| Clayson, Northampton                   | 1,899 0 0  |
| HONOUR & SONS, Tring (accepted)        | 1,839 0 0  |

**COLCHESTER.**

For Building Three Cottages in Crowhurst Road, Colchester. Mr. JAMES F. GOODEY, Architect, West Stockwell Street, Colchester.

|                 |          |
|-----------------|----------|
| Payne           | £520 0 0 |
| Gladwell        | 505 0 0  |
| Chambers        | 480 0 0  |
| Dupont          | 474 0 0  |
| Bowles          | 467 0 0  |
| Oldridge        | 447 10 0 |
| Dobson          | 439 0 0  |
| Eade            | 419 0 0  |
| Ambrose         | 398 16 0 |
| DISS (accepted) | 380 0 0  |

**CHOBHAM.**

For Residence for Mr. W. H. Corrie, Chobham, Surrey. Mr. EDWARD T. HALL, F.R.I.B.A., Architect, 57 Moorgate Street, London.

|                      |            |
|----------------------|------------|
| Newling              | £2,944 0 0 |
| Lynde                | 2,800 0 0  |
| Martin               | 2,575 0 0  |
| Gale                 | 2,555 0 0  |
| Watson               | 2,500 0 0  |
| BATCHELOR (accepted) | 2,220 0 0  |

**FERRYHILL.**

For Building Superintendent's House, Porch, Boundary Walls, &c., Draining and Laying Out Cemetery, Ferryhill, Durham. Mr. ROBERT W. THOMPSON, Architect, Bishop Auckland. Quantities by the Architect.

*Accepted Tenders.*

|                      |           |
|----------------------|-----------|
| Newton & Co., mason  | £837 18 0 |
| Manners, joiner      | 195 0 0   |
| E. Thompson, plumber | 95 10 0   |
| Mascall, slater      | 79 10 0   |
| Kirby, plasterer     | 26 0 0    |
| R. Thompson, painter | 16 0 0    |

Total . . . £1,249 18 0

**GREAT YARMOUTH.**

For Sewage Works, Great Yarmouth. Mr. J. W. COCKERILL, Borough Surveyor.

|                                |          |
|--------------------------------|----------|
| Johnson, Yarmouth              | £380 0 0 |
| Want, Yarmouth                 | 345 0 0  |
| Rudd, Yarmouth                 | 342 0 0  |
| Brown, Braintree               | 298 0 0  |
| Cork & Beech, Yarmouth         | 289 0 0  |
| Springall, Yarmouth            | 269 0 0  |
| Howes, Yarmouth                | 260 0 0  |
| HAYWARD, Eastbourne (accepted) | 251 10 0 |

**GUERNSEY.**

For Building Chapel, to seat 220, at the Landes Vale. Mr. J. DUQUEMIN, Architect.

|                |           |
|----------------|-----------|
| T. H. Duquemin | £905 10 0 |
| Peck           | 725 0 0   |
| Mahy           | 688 0 0   |
| N. Duquemin    | 650 0 0   |

**MEDALS AND PRIZES.—A Special General**

Meeting of the Royal Institute of British Architects will be held on Monday, the 2nd March, at Eight P.M., to elect a ROYAL GOLD MEDALIST and award the current year's medals and other prizes, for particulars of which, and of other business to be transacted, see the "Journal of Proceedings," issued on the 19th February to Members and Correspondents. The drawings submitted are on view at the Institute from Friday Evening, the 27th February, until Thursday, the 5th of March, both days inclusive.

**EXAMINATION IN ARCHITECTURE.**—The Board of Examiners will meet on Monday, the 9th March, to receive the applications and examine the probationary work of candidates desirous of qualifying themselves for nomination as Associates of the Royal Institute of British Architects. The last day for receiving applications, &c., to be made in accordance with rules which may be obtained of the undersigned, is Saturday, the 7th March.

J. MACVICAR ANDERSON, Hon. Secretary.  
WILLIAM H. WHITE, Secretary.  
Royal Institute of British Architects, 9 Conduit Street, Hanover Square, London, W.

**ARCHITECTURAL ASSOCIATION, 9 CONDUIT STREET, W.**

The Eleventh Ordinary Meeting will be held on Friday Evening next (March 6), commencing at 7.30, when a Paper will be read by JOHN SLATER, Esq., on "Building Stones."

W. H. ATKIN BERRY, HERBERT D. APPLETON, } Hon. Secs.

TO

ARCHITECTS, BUILDERS,  
AND  
CONTRACTORS.

STEEL CUT NAILS!!

The modern and important discovery in the process of making Steel has so reduced the price that Steel Cut Nails of the well-known "Mitre Brand" can now be supplied at only 1s. 6d. per cwt. more than the price of the ordinary Common Iron Cut Nails.

The Steel Cut Nails are far superior in quality and more uniform in size than any wrought or hand-made Nails yet produced, and being lighter in weight than ordinary Iron Cut Nails and free from wasters, they are found cheaper in actual use than common Iron Cut Nails at 1s. 6d. per cwt. less.

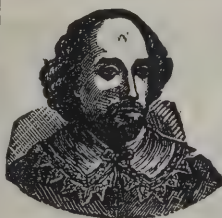
These Steel Cut Nails are specially suited for Builders, Joiners, Coopers, Packing-Case Makers, &c., and a single trial is sufficient to convince any one of their superior quality and cheapness.

PATENT WROUGHT STEEL NAILS.  
OVAL WIRE NAILS.

Ask your Factor or Ironmonger for  
"MITRE NAILS."

WHOLESALE AND EXPORT ONLY.

FIRST-CLASS CERTIFICATE AND SILVER MEDAL  
AT CALCUTTA EXHIBITION.

**QUANTITIES, ETC.**

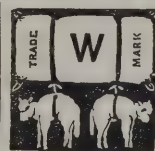
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**J. L. ALLDAY.**

Shakespeare Steam Printing  
Works,

COLMORE ROW,

BIRMINGHAM.

**WM. WOOLLAMS & CO.,**

ORIGINAL MAKERS OF  
ARTISTIC WALL  
PAPERS.

FREE FROM ARSENIC.

PATENT EMBOSSED  
FLOCKS.

Dado Decorations, Embossed Leathers, Raised Flocks.

No Travellers Employed.

SOLE ADDRESS—110 HIGH STREET, near  
MANCHESTER SQUARE, LONDON, W.  
Fourteen Medals, including Gold Medal, International Health  
Exhibition, 1884.

**SIR WM. BURNETT & CO.'S**

PROCESSES FOR THE PRESERVATION OF  
TIMBER AND CANVAS FROM DRY ROT, MILDEW,  
WHITE ANTS, and PREMATURE DECAY; also, for REN-  
DERING WOOD UNINFAMMABLE.

SIR W. BURNETT & CO. respectfully invite the attention of  
Architects, Civil Engineers, and all interested in the Preserva-  
tion of Timber or Canvas, to the merits of this process, the  
efficacy of which has been fully established by its successful  
operation in all parts of the world for upwards of thirty years.

Testimonials can be seen, and all further information obtained  
on application by letter or personally at the  
OFFICE: 90 CANNON STREET, LONDON, E.C.

**"SANITAS"**

THE HOUSEHOLD DISINFECTANT.

Sanitary Institute Medal, Exhibition, 1882.  
Silver Prize Medal, National Health Society, 1883.  
Award, International Medical and Sanitary  
Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture  
Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH  
BODIES.

The Sanitas Co., Limited, Bethnal Green, E.

**GRUNDY'S PATENT  
WARM-AIR****VENTILATING FIRE GRATE.**

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

**TESTIMONIALS.**

"9 Victoria Chambers, Westminster, S.W."

"June 10, 1884."

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it."

Yours, &c.

JAMES WEIR, F.R.I.B.A."

"To Mr. Grundy.  
"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square."

"February 15, 1884."

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,  
July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public."

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen."

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.  
"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City  
Road, London.  
Works—TYLDESLEY, near MANCHESTER.



## GRAVESEND.

|                                 |                             |    |   |
|---------------------------------|-----------------------------|----|---|
| For Kerbing Roads at Gravesend. | Mr. G. R. COBHAM, Surveyor. |    |   |
| Rayner, Gravesend               | £511                        | 17 | 6 |
| Archer, Gravesend               | 500                         | 12 | 6 |
| Middleton, Gravesend            | 495                         | 0  | 0 |
| Adams, London                   | 438                         | 15 | 0 |
| Wheeler & Hindle, London        | 438                         | 15 | 0 |
| W. & J. R. FREEMAN, London      |                             |    |   |
| (accepted)                      | 427                         | 10 | 0 |
| Curzon, London                  | 371                         | 5  | 0 |
| Middleton, Gravesend            | 337                         | 10 | 0 |
| Benstead & Sons, Maidstone      | 337                         | 10 | 0 |

## HEREFORD.

|  |      |    |    |
|--|------|----|----|
| For Erection of an Iron Cask Shed at the Hereford Brewery, for Messrs. Watkins & Son. Mr. W. W. ROBINSON, Architect, 21 King Street, Hereford. |      |    |    |
| Tildesley, Willenhall  | £384 | 0  | 0  |
| Davies Bros., Wolverhampton  | 327  | 0  | 0  |
| Humphreys, Hyde Park   | 310  | 0  | 0  |
| Glover & Son, Warwick  | 309  | 0  | 0  |
| St. Pancras Iron Co., London   | 305  | 0  | 0  |
| Ward & Co, Tipton  | 294  | 1  | 10 |
| Powell, Hereford   | 265  | 0  | 0  |
| Whitford & Co., London   | 264  | 0  | 0  |
| Braithwaite & Kirk, West Bromwich  | 260  | 0  | 0  |
| Williams & Co., London   | 252  | 10 | 0  |
| C. E. & J. Keay, Birmingham  | 249  | 10 | 0  |
| Anderson & Clarke, London  | 249  | 0  | 0  |
| Bennett, Hereford  | 248  | 10 | 0  |
| Blakeley & Co., Liverpool  | 246  | 0  | 0  |
| Harding, Hereford  | 238  | 0  | 0  |
| Lysaght, Bristol   | 225  | 0  | 0  |
| PERKINS & BELLAMY ROSS, Hereford (accepted)  | 212  | 0  | 0  |

## HERNE BAY.

|   |         |        |  |
|---|---------|--------|--|
| For Building Schools, Herne Bay, Kent, for the Herne School Board. Mr. THOS. BLASHILL, F.R.I.B.A., Architect. Quantities by Mr. Henry Lovegrove, 26 Budge Row, E.C. |         |        |  |
| Plan A.   | Plan B. |        |  |
| ADAMS (accepted)  | £3,700  | £3,313 |  |
| For full list of Tenders see Architect, Jan. 24.  |         |        |  |

## HECKMONDWIKE.

|  |      |    |   |
|--|------|----|---|
| For Building Engine-house, Chimney and Boiler Setting, at New Colliery, Cooke Lane, Heckmondwike. Mr. WM. ELLIS, Architect. Quantities by the Architect. |      |    |   |
| Robinson & Crowther, mason   | £469 | 18 | 0 |
| Highest out of 18 tenders sent in  | 714  | 18 | 0 |
| W. & T. Milner, joiner   | 46   | 16 | 0 |
| Highest out of 8 tenders   | 65   | 19 | 0 |
| Brook, plumber   | 15   | 15 | 0 |
| Highest out of 6 tenders   | 26   | 14 | 8 |
| Thompson, slater   | 21   | 0  | 0 |
| Highest out of 8 tenders   | 26   | 0  | 0 |

## HENDON.

|   |        |   |   |
|---|--------|---|---|
| For First Portion of Villas in Belle View Road, Hendon. Mr. BANISTER FLETCHER, Architect. |        |   |   |
| ELLACOTT (accepted)   | £1,200 | 0 | 0 |

## LICHFIELD.

|   |        |    |   |
|---|--------|----|---|
| For Extension of Union Workhouse, Lichfield. Mr. W. H. CROMPTON, Architect. |        |    |   |
| Burton, Lichfield   | £2,053 | 12 | 9 |
| Walmesley, Lichfield  | 2,029  | 0  | 0 |
| Wistance, Walsall   | 1,949  | 0  | 0 |
| Lynex, Walsall  | 1,945  | 0  | 0 |
| Whittome, Stafford  | 1,750  | 0  | 0 |
| Bradney & Co., Wolverhampton  | 1,695  | 0  | 0 |
| Bennett, Birmingham   | 1,689  | 0  | 0 |
| HARTLEY, Birmingham *   | 1,593  | 0  | 0 |
| Architect's approximate estimate  | 1,850  | 0  | 0 |
| * Accepted conditionally.   |        |    |   |

## LINCOLN.

|   |  |  |  |
|---|--|--|--|
| For Building Villa, Stable, and Cottage, and also for building Six Villas, in new Road from Huggate to West Parade, for Mr. C. K. TOMLINSON. Mr. W. WATKINS, Architect. |  |  |  |
|---|--|--|--|

## Villa, Cottage, &amp;c.

|                            |        |   |   |
|----------------------------|--------|---|---|
| Greenwood, Mansfield       | £1,549 | 6 | 1 |
| Harrison, Lincoln          | 1,440  | 0 | 0 |
| WRIGHT, Lincoln (accepted) | 1,415  | 0 | 0 |

## Six Villas.

|                              |       |   |   |
|------------------------------|-------|---|---|
| Greenwood, Mansfield         | 4,281 | 0 | 7 |
| Wright, Lincoln              | 4,230 | 0 | 0 |
| HARRISON, Lincoln (accepted) | 4,115 | 0 | 0 |

## LINTHORPE.

|   |  |  |  |
|---|--|--|--|
| For Building House at Linthorpe. Mr. W. H. BLESLEY, Architect, Middlesbrough. |  |  |  |
| Pounder & Son, excavator, bricklayer, mason, and plasterer.                   |  |  |  |
| Chapman, carpenter and joiner.  |  |  |  |
| Walton, plumber, glazier, bellhanger, and gas-fitter.                         |  |  |  |
| Tyreman Bros., slater.  |  |  |  |
| Cockton, painter.   |  |  |  |

## LONDON.

|  |        |   |   |
|--|--------|---|---|
| For Pulling Down and Rebuilding 19 Ivy Lane, Newgate Street, for Mr. R. H. Abbott. Mr. W. SMITH, Architect, 1 Gresham Buildings. |        |   |   |
| Goodman  | £1,887 | 0 | 0 |
| Shurmur  | 1,836  | 0 | 0 |
| Woodward   | 1,795  | 0 | 0 |
| Grover & Son   | 1,786  | 0 | 0 |
| Durnford & Langham   | 1,749  | 0 | 0 |
| Dixon & Co.  | 1,735  | 0 | 0 |
| Stevens Bros.  | 1,725  | 0 | 0 |
| Anley  | 1,704  | 0 | 0 |
| Mattock Bros.  | 1,691  | 0 | 0 |
| Wilson   | 1,584  | 0 | 0 |
| J. & J. Greenwood  | 1,583  | 0 | 0 |
| Larke & Son  | 1,569  | 0 | 0 |
| RICHARDSON (accepted)  | 1,564  | 0 | 0 |

|  |        |   |   |
|--|--------|---|---|
| For Alterations, &c., at the White Hart, Woodford Bridge. Mr. J. F. WESLEY, Architect. |        |   |   |
| Hearle & Son   | £2,160 | 0 | 0 |
| Gregar   | 2,137  | 0 | 0 |
| Roby   | 2,032  | 0 | 0 |
| Ranger   | 1,998  | 0 | 0 |
| J. & H. Cox  | 1,980  | 0 | 0 |
| Palmer   | 1,895  | 0 | 0 |
| Holland  | 1,885  | 0 | 0 |
| Shurmur  | 1,885  | 0 | 0 |
| Taylor   | 1,851  | 0 | 0 |
| Barnes   | 1,829  | 0 | 0 |

|   |  |  |  |
|---|--|--|--|
| For Alterations to Shop Fronts and Houses in East Street, S.E., for Mr. T. Backhouse. Mr. W. C. REED, Architect, 1 Adelaide Place, London Bridge. |  |  |  |
|---|--|--|--|

|         |      |   |   |
|---------|------|---|---|
| Greenow | £385 | 0 | 0 |
| Batley  | 250  | 0 | 0 |
| Wood    | 199  | 0 | 0 |
| Kemp    | 168  | 0 | 0 |

## THE "HARDING" VENTILATING COMPANY,

30 EAST PARADE, LEEDS.

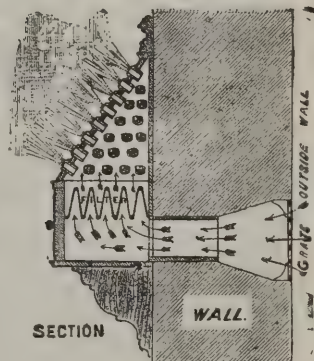
## HARDINGS' PATENT AIR DIFFUSER

FOR VENTILATING ALL KINDS OF BUILDINGS.

Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



## CHURCH WALL VENTILATOR.—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

OUR PATENT EXTRACTOR is the best in the Market, and is supplied at a very much lower price than any other.

CHURCH WINDOW VENTILATOR.—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.

"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.

A reduction in price is made where a number of Diffusers is required.

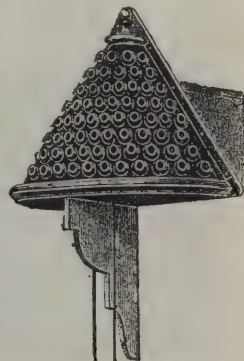
Estimates and further information given on application to the "HARDING" VENTILATING CO., 30 East Parade, Leeds.



Diffuser with Filter.



Air Extractor.





## LONDON—continued.

|  |         |     |
|--|---------|-----|
| For Building Board School, Upper Kennington Lane. Mr. E. R. ROBSON, Architect. |         |     |
| Shepherd   | £25,460 | 0 0 |
| Palmer   | 25,179  | 0 0 |
| Higgs & Hill   | 24,750  | 0 0 |
| Goodman  | 24,450  | 0 0 |
| Brass  | 23,981  | 0 0 |
| Hunt   | 23,782  | 0 0 |
| Gentry   | 23,575  | 0 0 |
| Marsland   | 23,555  | 0 0 |
| Nightingale  | 23,533  | 0 0 |
| Croaker  | 23,280  | 0 0 |
| Hart   | 22,791  | 0 0 |
| Howell & Son   | 22,763  | 0 0 |
| Tongue   | 22,750  | 0 0 |
| Smith & Son  | 22,668  | 0 0 |
| Grover   | 22,587  | 0 0 |
| F. & F. J. Wood  | 22,364  | 0 0 |
| Reading  | 22,226  | 0 0 |
| Scrivener  | 22,179  | 0 0 |
| Atherton & Latta   | 22,099  | 0 0 |
| Oldrey   | 21,987  | 0 0 |
| Holloway Bros.   | 21,976  | 0 0 |
| Cox  | 21,971  | 0 0 |
| Stimpson & Co.   | 21,926  | 0 0 |
| Lathey Bros.   | 21,780  | 0 0 |
| H. L. Holloway   | 21,765  | 0 0 |
| Johnson  | 21,750  | 0 0 |
| Kirk & Randall   | 21,734  | 0 0 |
| Wall Bros.   | 21,577  | 0 0 |
| C. Wall  | 21,576  | 0 0 |
| Jerrard  | 21,479  | 0 0 |
| Downs  | 21,366  | 0 0 |
| Turtle & Appleton  | 21,094  | 0 0 |

For Rebuilding the Queen's Head Public-house, Charlotte Street, Whitechapel, E., for Messrs. Truman, Hanbury & Co. Mr. J. T. NEWMAN, Architect.

|                         | Concrete Floor. | Wood Floor. |
|-------------------------|-----------------|-------------|
| Marr                    | £2,049 0 0      | £1,989 0 0  |
| Shurmur                 | 2,043 0 0       | 1,980 0 0   |
| Morter                  | 2,031 0 0       | 1,988 0 0   |
| HEARLE & SON (accepted) | 1,985 0 0       | 1,861 0 0   |

For Heating St. Mark's Mission Hall, Noel Park, Hornsey.  
BACON & Co., London (accepted).

## LONDON—continued.

|   |        |     |
|---|--------|-----|
| For Enlargement of Board School, Essex Street, Mile End. Mr. E. R. ROBSON, Architect. |        |     |
| Jackson & Todd  | £8,750 | 0 0 |
| Hart  | 8,676  | 0 0 |
| Lathey Bros.  | 8,646  | 0 0 |
| Pritchard   | 8,581  | 0 0 |
| Perry & Co.   | 8,558  | 0 0 |
| Palmer & Co.  | 8,555  | 0 0 |
| Kearley   | 8,530  | 0 0 |
| Wall Bros.  | 8,400  | 0 0 |
| C. Wall   | 8,367  | 0 0 |
| Atherton & Latta  | 8,350  | 0 0 |
| Oldrey  | 8,337  | 0 0 |
| Johnson   | 8,300  | 0 0 |
| Hunt  | 8,270  | 0 0 |
| Stimpson & Co.  | 8,230  | 0 0 |
| F. & F. J. Wood   | 8,217  | 0 0 |
| Tongue  | 8,200  | 0 0 |
| Howell  | 8,166  | 0 0 |
| Kirk & Randall  | 8,161  | 0 0 |
| Shurmur   | 8,145  | 0 0 |
| Jerrard   | 8,089  | 0 0 |
| Grover  | 8,070  | 0 0 |
| Cox   | 7,989  | 0 0 |
| H. L. Holloway  | 7,887  | 0 0 |

For Cleansing Streets, &c., for six months, for the Holborn Board of Works. Mr. L. H. ISAACS, Surveyor.

|                  |        |     |
|------------------|--------|-----|
| Boyce            | £4,500 | 0 0 |
| Crane            | 3,750  | 0 0 |
| Irons            | 3,650  | 0 0 |
| Killingback      | 3,560  | 0 0 |
| Jackson & Son    | 3,545  | 0 0 |
| Stevens          | 3,500  | 0 0 |
| HEARD (accepted) | 3,400  | 0 0 |

For Building Five Shops in the Old Kent Road, S.E., for Mr. T. Backhouse. Mr. W. C. REED, Architect, 1 Adelaide Place, London Bridge.

|          |        |     |
|----------|--------|-----|
| Legg     | £1,590 | 0 0 |
| Smith    | 1,497  | 0 0 |
| Cross    | 1,397  | 0 0 |
| Marriage | 1,250  | 0 0 |

For Heating Kelledon House, Celbridge, Ireland.  
BACON & Co., London (accepted).

## LONDON—continued.

|  |        |     |
|--|--------|-----|
| For Enlargement of Board School, Shillington Street, Battersea. Mr. E. R. ROBSON, Architect. |        |     |
| Oliver   | £4,380 | 0 0 |
| Palmer & Co.   | 4,336  | 0 0 |
| Shepherd   | 4,197  | 0 0 |
| Chappell   | 4,083  | 0 0 |
| Reading  | 3,966  | 0 0 |
| C. Wall  | 3,963  | 0 0 |
| Wall Bros.   | 3,939  | 0 0 |
| Scrivener & Co.  | 3,899  | 0 0 |
| Boyce  | 3,889  | 0 0 |
| Groves & Son   | 3,886  | 0 0 |
| Kearley  | 3,863  | 0 0 |
| Hart   | 3,858  | 0 0 |
| Holloway   | 3,857  | 0 0 |
| Oldrey   | 3,850  | 0 0 |
| Cox  | 3,849  | 0 0 |
| Jerrard  | 3,842  | 0 0 |
| Kirk & Randall   | 3,818  | 0 0 |
| Johnson  | 3,800  | 0 0 |
| Atherton & Latta   | 3,800  | 0 0 |
| Stimpson & Co.   | 3,797  | 0 0 |
| Smith & Sons   | 3,734  | 0 0 |
| Downs  | 3,729  | 0 0 |
| Lathey Bros.   | 3,697  | 0 0 |
| Hunt   | 3,661  | 0 0 |
| Holloway Bros.   | 3,614  | 0 0 |
| Howell & Son   | 3,598  | 0 0 |
| W. & F. Croaker  | 3,590  | 0 0 |

For Additions to Board School, Riley Street, Bermondsey.

|                |        |     |
|----------------|--------|-----|
| Sargeant       | £3,397 | 0 0 |
| Nightingale    | 2,859  | 0 0 |
| Oldrey         | 2,838  | 0 0 |
| Wall           | 2,817  | 0 0 |
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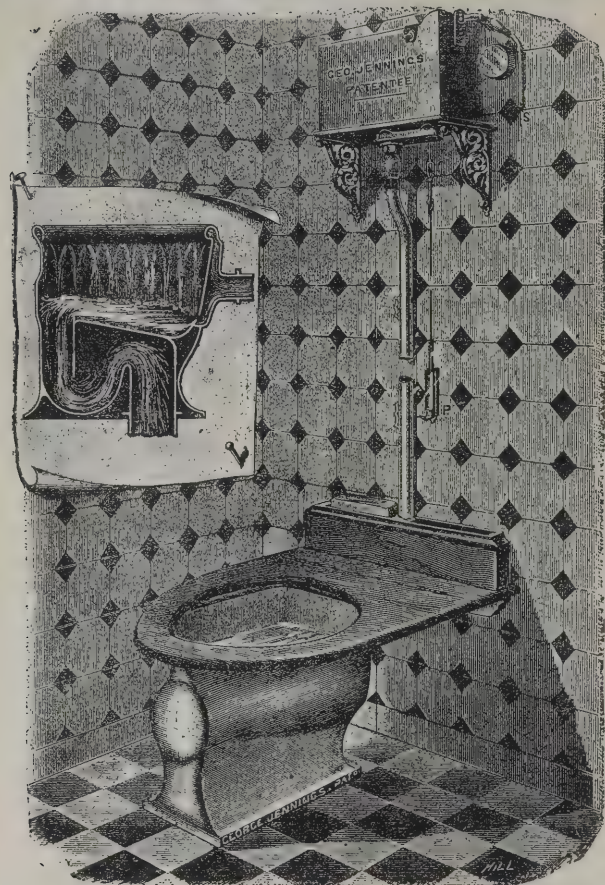
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The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

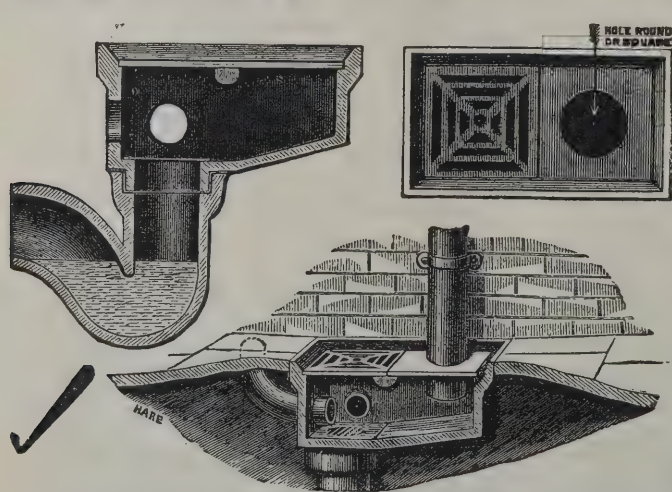
At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and, successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with **"JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN"** 5 feet over, with  $1\frac{1}{2}$  inch down pipe, ten apples (averaging  $1\frac{1}{2}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

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# The Architect.

## THE WEEK.

THE disesteem in which architects are held in England, through no fault of their own, appears to have extended to France. It is no longer uncommon to read of attempts to dispense with an architect's services. This week a remarkable slight has been cast upon the profession. Two streets in Paris which have been called after architects now bear new names. The Rue Lefuel has become the Rue de Sontay, and the Rue Vaudoyer is the Rue de Sfax. If architects had been opposed to the wars in Africa and Asia, the change might be supposed to be an act of retribution, but it can only be interpreted as a consequence of some want of pliability on the part of one of the architects of the Municipal Council.

MR. E. R. ROBSON was on Saturday last presented with a testimonial and address by the assistants who formed his staff while he held the office of Surveyor and Architect to the School Board of London. The testimonial is a silver casket, weighing eighty-five ounces, which was manufactured by Messrs. MEYER, in the form of a Greek temple supported by twelve columns, and the address, which is in book form, is enclosed within it. The presentation was made at the offices of the Board, and at the ceremony Mr. LEWIS WALL acted as chairman, with the support of Mr. T. J. BAILEY, the architect, Mr. ANDREW YOUNG, the surveyor, and other heads of the department.

ENGLISH painters are more fortunate than those of France, as they have a longer time to prepare for the annual exhibition. Works of painting (with those of architecture and engraving) are received at the Royal Academy on the 27th, 28th, and 30th of this month, and sculpture on March 31. But paintings and drawings for the Salon must be left at the Palais in the Champs Elysées not later than the 14th inst.; sculpture has from March 21 to April 2, while architecture, engraving, and lithography may be delivered between the 2nd and the 5th of April. The French arrangement is preferable to the English, for there is no advantage in crowding etchings, water-colours, enamels, engravings, and architectural designs along with paintings. At the Salon there is a time as well as a place for everything.

PROFESSOR GEIKIE, the Director of the Geological Survey of Great Britain, when speaking in Edinburgh on Monday, described the work which has yet to be done by the surveyors. The first in importance is the completion of the drift survey, particularly to trace out as accurately as possible the southern limit reached by the glaciers, as shown by the boulder clay. It is next proposed to complete the detailed surveys of the coalfields on the scale of six inches to the mile. Professor GEIKIE would then complete the series of sheet memoirs, which would supply details which could not be presented on the maps. The memoirs would pave the way for the crowning work of the survey, namely the stratigraphical monographs, or detailed descriptions of each of the geological formations of the country. But even then the work could not be considered complete; for the Director considers that a geological survey ought to resemble an astronomical observatory, and allow of perpetual observations.

THE honorary retired list of the Royal Academy has been increased this week by the addition of the name of Mr. ERSKINE NICOL, who has been an associate since 1866. Mr. NICOL is a Scotsman, but his reputation was made by his figures of Irish peasants. The first of them was the "Onconvenience of Single Life," which was made popular by means of highly coloured lithographs. The artist took up his quarters near Multifarnham, in Westmeath, a district which, although one of the least picturesque, contained good materials for *genre* pictures.

Mr. NICOL was most successful when representing Irishmen of the stage type, and he failed when he attempted to depict the darker side of life on the island. This arose partly from a deficiency of tragic power, but mainly from the artist being a painter of costume rather than character. Mr. NICOL in his first picture discovered that the world could admire shreds and patches and frowsy garments, and he was wise to follow the public taste. But there is a marvellous difference between his peasants and those which the present Director of the National Gallery used to draw, or those of the late Mr. TOPHAM.

THE Parliamentary return showing the sums expended on pictures by the trustees of the National Gallery between 1860 and 1884 out of money provided by Parliament suggests the economy of the State and the difficulty of obtaining first-class works. In the quarter of a century the outlay has been 250,091*l.*, or 10,000*l.* a year on an average. But in two of the years, 1871-72 and 1872-73, there was no expenditure, and in 1877-78 the amount was only 350*l.* The largest sum expended in one year was in 1870-71, when 76,500*l.* was laid out. Of that sum the Peel collection, consisting of seventy-seven pictures and eighteen drawings, absorbed 75,000*l.* In 1874-75 the Barker collection of thirteen pictures cost 10,395*l.*, and in 1882-83, for the Hamilton collection of ten pictures, a sum of 21,042*l.* was paid. It is remarkable that during the whole period there was not one instance when as much as 10,000*l.* was paid for a single picture. The *Ansidei Raphael* is therefore the first expensive picture which has been bought.

THE quantity of arsenic which was at one time employed in the manufacture of paperhangings may be inferred from what was said by Mr. AUMORIER in the paper read by him at the Building Exhibition on Monday. One firm in the trade stated that they formerly used on an average one ton of emerald green per week all the year round. The colour is the most arsenical in general use, and, in round numbers, half of its weight may be considered arsenical. This would give a consumption in one factory of about twenty-five tons of arsenic per annum, and as there were several other makers in an equally large way of business, and a number of smaller factories, it would be safe to assume that this firm did not use one quarter of the whole quantity used in the trade of England alone. It is, therefore, certain that at least 100 tons of arsenic were annually used for paper staining until its employment was voluntarily abandoned by manufacturers under the pressure of public opinion.

THE decisions which were given by Lord COLERIDGE and Mr. Justice SMITH on Wednesday are likely to make local authorities become more expeditious in raising objections against buildings which are supposed to show a departure from bye-laws. A new building was erected in Hove without the approval of the Commissioners of the district. According to the bye-law, no time is named for serving notice, but the Public Health Act states one month. As the notice was not given in that time, the magistrates dismissed the summons. The Commissioners appealed on the ground that the section as to the month only applied where it was proposed to pull down a building. Lord COLERIDGE, however, held that the surveyor of the Commissioners was bound under the Act or the bye-laws to give notice to the builder within a month that the Commissioners disapproved. The Act said that the local authority "shall" signify their disapproval within the month, and they could not make any bye-law at variance with this or going beyond it, and therefore they were precluded from recovering the penalty. Mr. Justice A. L. SMITH concurred, and said that according to the Act the local authority "shall" within a month signify their approval or disapproval, and the enactment had imposed a statutable limit on the exercise of their powers—a most salutary limitation, for a man was not to be precluded for ever from building on his own land. The defendant had waited the month before he went on with the building, but the Commissioners had not within that period signified their approval or disapproval. The decision of the magistrates on dismissing the case was therefore supported.



## THE COUNTRY MEMBERS OF THE INSTITUTE.

IN the contemplated reforms at the Institute how are the country members to be benefited? Under the present charter they are entitled to all the privileges enjoyed by the London members, and are precisely on the same footing as regards the payment of subscriptions. On the Council they are represented by five members, being one-third of the whole number. The charter, however, limits the power of voting to Fellows who are present at the meetings, and all Associates are debarred from voting or otherwise interfering in the regulation of the affairs of the Institute—the office of auditor being the only one excepted. Country members complain, and, as we have often said when treating on this subject, justly complain, that the restrictions in voting are vexatious to them, and should as far as possible be removed. We can see no valid reasons against taking powers, under a new or supplemental charter, to extend the power of voting to every architect who supports the Institute by his subscription. The difficulty is, how far can this be done? If a clause were inserted in the new deed, of the kind we have heretofore proposed, authorising voting by proxy or by voting papers, elasticity would be gained, and ways and means found for meeting present difficulties. Both in the class of Associates and in the large number of country members, a state of things has arisen which we may safely say was never contemplated when the charter of WILLIAM IV. was granted. At that time the majority of architects of any eminence in the profession were resident in the metropolis, so that this limitation as to voting was natural. Now all over the United Kingdom there are many architects of great ability. London no longer dominates the country. Every big city becomes a centre, and opinions can be so easily exchanged that country architects are put almost upon an equality of advantages with their London brethren. The particular educational advantages which London possesses are generally made use of by men some time or other before they settle down to practice; and though in the country they miss those opportunities for meeting and discussing matters of interest which are available in town, these drawbacks are, after all, not very serious. The records of successful competitors in competitions show how many are taken by provincial architects, and the great one of this decade has been carried off by Halifax. One of the tendencies of modern civilisation is, apparently, decentralisation; and, though London must always possess great advantages, it will no longer enjoy that entire exclusiveness in matters of art and literature which it has formerly held. Day by day barriers are broken down which formerly hedged-in the profession, and the country offers baits sufficiently tempting to secure able men to settle and practise there. Country practitioners in architecture now frequently turn the scales, and carry out works in London and its neighbourhood.

The Institute ought, if it is to be representative, to include every man of note in the profession, but to do this it must give some *quid pro quo*. We have often heard the expression from country architects, "What is the good of joining the Institute? We can seldom attend the meetings, and unless we are present at them we cannot exercise our vote." There *is* some good in joining the Institute, if it were only for the sake of attempting the cultivation of *esprit de corps*, strengthening the hands of the profession generally, and forming some barrier against the admission into their ranks of men in no way qualified to be architects. A society which included all the best men of the profession would possess a power for extending their privileges and gaining a recognised position, which would be of inestimable advantage if wisely and energetically utilised. Now that admission as an Associate of the Institute is by examination, some guarantee is afforded of competency. Probably, examination for the grade of Fellow, to any one who shall seek that honour, will be logically required as time goes on.

It is in the election to the Council where the country members may fairly demand to have a voice, which, unless present, they cannot at present use. We can see no reason why all elections to the various offices now in the hands of Fellows, and elections on to the Council, should not be conducted by voting or balloting papers. To accomplish

this would be a wise reform, and would doubtless bring, in time, more provincial architects into the Institute. In other societies this plan of voting by papers or by proxy answers well, and would we fancy be appreciated at the Institute. The Council elected by the whole body of Fellows and by the Associates (should the vote be extended to the latter), would be far more representative and powerful. Perhaps, at first, the eagerness to make use of the suffrage would show a greater departure in the composition of the Council than has been apparent of late years. Something there is, wanting now at the Council-board, which an extension of the voting-power may, and we hope will, supply. Some think that the system of voting by papers, or by proxy, should be extended beyond the province of elections to offices and for members of Council. We are decidedly of opinion that it would not be practicable to make such an extension. In an election there is a certain definite issue. The whole matter is before the voter; no arguments will be offered to him for his consideration; he has but to say his yea or nay to the names on the list in his hands. But in all matters where argument enters in—and men must have their say with *pro and con*—the case is different. A man may enter a room prepared to vote upon a certain question in a certain way. While listening to the debate, another character is put upon the matter in discussion, which so alters the complexion of it that he votes contrary to his first intention. Again, were this voting extended indiscriminately, country members would be constantly asked to give their votes on questions as they arise, the value of which votes, and their bearing on the Institute, they could have no possible means of weighing. Thus a state of things would come which would end in abuse of the privilege, and simply go to encourage sedition and unrest, be most unwise and injudicious, and soon bring about the downfall of the Institute.

Another method of securing greater cordiality between architects would be the holding of conferences in the various great centres. The provincial architects in some of our extensive manufacturing districts have so much to show their London friends that very pleasant meetings might be arranged, which would do much to make the profession better known to the public, and architects to each other. The plan has often been proposed; let it be carried out, and not end, like so much else, simply in talking about it.

Why among the papers read at Conduit Street are so few of them from country members? Men whose avocation is the using of the T-square are not, as a class, renowned for their gifts of composition and eloquence; but many, laying no claim to these talents, could impart most useful information; and were some pressure put upon the country members, it is probable they would be induced to contribute more often to the volumes of the "Transactions." Everything that will excite interest among all classes of the members, should in wisdom be assiduously cultivated by those whose responsibility it is.

The system of holding local examinations for admittance to the class of Associates is a wise one, and will doubtless be extended. No difficulties should be put in the way of men wishing to join the Institute. Another great want is a kind of club-room. Professor KERR gave expression to this not long ago, and we have often heard men express their surprise that the Institute has no place where architects can meet, and see a friend, client, or builder. Such a general meeting-room, provided with the papers, journals, means for writing, &c., would be a real boon. Country members would find the room exceedingly useful, and every effort should be made to supply it.

In such ways as we have touched upon, the advantages of membership of the Institute may be extended to country architects, and their support and sympathy secured.

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**The Committee** of the City of Manchester Art Gallery have arranged for an exhibition of works of modern artists, to be opened on Friday, September 4 next. The exhibition will comprise paintings in oil and water-colour. In selecting and hanging the works sent for exhibition the committee will have the assistance of a member of the Royal Academy.

**Owens College, Manchester**, is one of the recipients of the publications of the Record Commission, which are now being distributed by the Treasury.



## MR. HOLMAN HUNT AND M. MUNKACSY.

IT is easy to see the operation of very different influences in the two pictures by Mr. HOLMAN HUNT and M. MICHAEL MUNKACSY, which were shown to the public on the same day, one in Bond Street, the other in Piccadilly. M. MUNKACSY could hardly escape from the supposition that a painting of a religious subject is intended to appeal to crowds of people in churches. Whatever might be the destiny of his work, early associations would compel him to treat it in a way which might be understood by the multitude. The body is therefore to him much more than the raiment, and such powers as he possesses are employed on expression rather than on details of costume. A painter like Mr. ALMA-TADEMA would be horrified at the garments which are thrown on the Romans and Jews, who are the actors in the scene represented in *Calvary*; but it must not be forgotten that many generations of men have been satisfied with seeing figures in religious pictures wearing robes of a form and colour that were never seen in the East or elsewhere. The worshippers in a church are not sticklers for accuracy in costume, and they cannot wait for a picture to slowly grow upon them by a development of its meaning. Everything must strike the mind at a glance or not at all. If we may be allowed to make the comparison, M. MUNKACSY is like an actor who has to think mainly of the gallery, and who is therefore obliged to exaggerate in order that effects may tell. When he paints villains (and there are a great many of them in *Calvary*) he seems as if he were endeavouring to excite the spectators to hiss and hoot. With painters of his class it is difficult to suppose that "one may smile and smile and be a villain;" the mind's construction is, according to them, always to be seen in the face. Mr. HOLMAN HUNT, on the other hand, knows nothing of the thoughts which are excited in peasants and humble folks by the sight of pictures in a church. His spectators, if few, are fit, and are supposed to have the time and qualifications which are necessary in order to comprehend all the ideas which he expresses on canvas. "Beautiful things are difficult to be understood," says the Greek proverb, and before the picture can be appreciated we must know the differences between the Western and Eastern churches in respect of certain traditions; we must realise that the landscape has the fidelity of a photograph, and maintain that existing forms are identical with those of the first century, we must accept Rabbinical stories, and, with the mystics, believe that we are environed with a spirit world, although without eyes to see it. Greek poets could suppose that rivers were endowed with life, and show favouritism by taking sides in the contests between Greeks and Trojans. In looking at Mr. HOLMAN HUNT's picture, we must likewise see nothing unreasonable in a stream becoming transfigured and assuming the form of iridescent spheres in which past events are mirrored. "To reason about faith," says SWEDENBORG, "is to doubt and deny," and to enjoy *The Triumph of the Innocents*, unhesitating acceptance of the author's belief is, we suppose, indispensable. Make it the subject of discussion, and we fear its success becomes doubtful.

*The Triumph of the Innocents* depicts that Flight into Egypt which has been so often and so variously treated by painters. It is not uncommon to find the Holy Family with an accompaniment of angels, but this is the first time in which their place is taken by the spirits of the slain Innocents. It is an effort of the imagination, which merits our recognition. The children form three groups. There is an advanced guard of three who are types of different races. One wears the robes of a priest and of the colour which befits martyrs: he looks upwards, as if he were possessed of the "vision and the faculty divine;" a second, who has the bearing of an English boy, bends his palm branch with a smile that is suggestive of a joy in suffering; while the third, of darker hue, has the stolid gravity which is often seen among African ecclesiastics. Then there is the largest group, consisting of several children, who nearly surround the Holy Family. They are not supposed to have attained the insight of the foremost children, and their office seems to them a sort of game. One child, with naïve wonder, looks through the cut which has been made in his shirt by the sword for the wound which pierced his breast—it may have been an hour earlier. The children are garlanded, and

there is much variety of colour and costume among them. The third group is floating in the air—indeed the infants are so young they could hardly be expected to walk; they must acquire new powers if they are to follow the others. They seem to be in a troubled sleep, and are, we suppose, to be taken as the very latest victims of HEROD.

The groups of children are unlike any which are known in art. We have published groups by LUCA DELLA ROBBIA, ALBANO, and others, which should exemplify what has been done in representing child-life; but Mr. HUNT's figures have little resemblance to them, or to those which have been given by REYNOLDS and STOTHARD. They are not the children which are to be seen every day, for they have undergone a process of sublimation which has taken the earthly character out of them. It seems to us they are too mature in body and expression. It may have been the painter's intention to suggest that for them there was no more growth, and somehow their joy is mixed with sadness. The infants who float in the rear of the procession are nude, and they show a muscular development that is not to be seen in nurseries. That softness of flesh and delicacy of contour which belongs to early childhood are absent throughout. There is another peculiarity. The children have all the nimbus (which is seen descending on the latest of the slain), but it is of a form that, so far as we know, is without precedent. The nimbus has been made square, circular, cruciform, triangular, elliptical, flame-shaped—or, in other words, of a form that is geometrical—but Mr. HUNT shows it as a sort of crown of scintillating light that corresponds with the shape of the head. The innovation is reasonable, but it adds so much to the painter's difficulty that it is never likely to supersede the old conventional arrangement. The original meaning of the word refers to something cloudlike or radiant, and therefore Mr. HUNT's treatment of the form is the more consistent, as it suggests an emanation of glory.

The central group is composed of the Holy Family. The Virgin, who carries the Infant SAVIOUR in her arms, is seated on a smooth-skinned donkey of the Mecca breed, which is led by St. JOSEPH. But as he turns towards Bethlehem, in the fear of pursuit by the soldiers, we only see his back, and attention is concentrated on the two principal figures. The face of the Virgin is more English than Eastern in type, and it has many of the characteristics of a portrait. The Virgin is engaged in dressing the Holy Child, and appears to be unconscious of the troop of attendants which are around, while the SAVIOUR turns to them with joy. The painter's own description of his work tells us that MARY is thinking of "the woes of the children torn from their mothers' breasts for ever, and of the bereaved childless women mourning their dearest ones; she searches her much-harassed mind to find consolation for the weeping neighbours of her home." Emotions like those are difficult to represent, and unless imagination helps us we cannot say they are visible on the canvas. Mr. HOLMAN HUNT says that to him "it seems that among the saints in the group which fostered the Christian Church during its first perils, none was greater than JOSEPH." But, as we have said already, we do not see the face of the saint, and the figure suggests a more vigorous man than is usually found in paintings of the Flight.

The time selected by the painter is night. We see the deep blue eastern sky studded with solemn stars, and the quiet country that seems almost of the same colour, with the lights in the distance, which are suggestive of commotion, and of a village where there was lamentation and RACHEL weeping for her children. But while the landscape is so dark the whole of the figures are in the strongest light, and the colouring has a vividness that is suggestive of something more powerful than the sun's rays. In pictures by CORREGGIO and REMBRANDT, where there are powerful effects of this kind, the source of illumination is supposed to be the SAVIOUR, but in this case the cause is not suggested. The wild dogs are scared by the light, but there is nothing to show that MARY and JOSEPH are conscious of it.

The light has an important office to sustain. Mr. HUNT is a realist and yet a mystic. We might go so far as to assert that his realism is an effect of his mysticism, for it is the very intensity of his vision which makes his work differ from other men's. But if, as has been done before, the Flight



into Egypt were made a night scene in which the wayfarers were dimly visible, what would become of his power over detail? One thing or the other must have been sacrificed if it had not been for the inspiration to introduce a light which should surround the figures like a divine atmosphere. Mr. HUNT thus secured an opportunity to be as realistic as he chose, for it may be supposed that we see everything with the aid of an exceptional illumination. The detail in the work is marvellous, and everything is put before us with the most conscientious exactitude. It is only by taking inch after inch of the figures that the fulness of the work can be understood. We are not, perhaps, exaggerating when we say that many a picture is to be seen in Bond Street which must have taken less time than was expended in painting the carpenter's tools and basket which St. JOSEPH carries on his back.

The detail does not lead to spottiness or littleness of colour. In none of Mr. HUNT's former works have we seen greater richness. The whole blends admirably, with a single exception, and that is a cap on one of the children, which is of so hard a blue that it must have been a product of one of the colours invented by modern scientists. The picture is a great work, and it has been accomplished under difficulties which were enough to have made the bravest cast the canvas aside.

M. MUNKACSY, like Mr. HUNT, has departed from stereotyped ways. The latter, however, becomes almost academic by having the principal figures in the centre, and following a pyramidal arrangement. M. MUNKACSY adopts the bold expedient of placing the three crosses on which the SAVIOUR and the thieves are hanging at the side of the picture, and thus he makes them the end of a long line of people. But whatever merit may have been in the idea, it has not been carried out effectually. There is nothing in the arrangement which leads the spectators' thoughts to what should have been the principal figure. The Jews are departing, and have turned their backs to the agony that is visible on the cross. It would have been easy to have made the desolation of the scene become impressive if the Jews had been shown descending the hill, at more or less distance from the place of execution; but as every figure is painted on the same scale and is placed on the same plane, there is no gradation. We have simply several people moving in one direction, while three women and a man remain at the foot of one of the crosses. There is no space between the figures, which in fact form so united a crowd that their interests in the scene cannot be contrasted. Constructive skill is so ignored, that if the history of the scene were not known it might be imagined that the principal figure was the brutal ABHORSON, who stands with his ladder in a diagonal position, as if he were proud of his office of executioner; or the JUDAS, whose terror is of so melodramatic a kind; or one of the rabbis who are discussing the event. The painter's intention apparently is to suggest the degradation of the punishment by showing how people could regard it with indifference, and would not even wait for the death of the criminals when there was a possibility of a heavy shower of rain. But there is so much commotion that this intention has not been achieved. The picture would become more impressive if it were cut in two; the part showing the crucifixion would then be sufficiently complete.

Every one of the figures considered separately is most vigorously modelled, and the agony of the SAVIOUR is rendered with much pathos. If placed in a church, the painting could hardly fail to secure interest; but we doubt if it will sustain the test of an exhibition-room as well as M. MUNKACSY's *Christ before Pilate*, although in some points it shows that the painter has improved. That so many pictures of religious subjects should now be found within a short distance, is suggestive of a breaking-down of the obstacles which kept us in England from attempting the noblest form of art.

**Kingsbury Church** is to be enlarged and restored, according to plans prepared by Mr. Newman. It will form the centre of a new ecclesiastical district to be formed out of the parishes of Willesden and Neasden.

**The New Parish Offices**, in Birmingham, were opened on Tuesday. The building, which stands at the corner of Newhall Street and Edmund Street, will cost about 35,000*l.*, and was designed by Mr. W. H. Ward.

## PRINCIPLES OF ARCHITECTURAL DESIGN.\*

BY G. F. BODLEY, A.R.A.

SOME of those principles and characteristics of architectural design which I would bring before you to-night are:—Refinement, concentration, true use of detail, symmetry, economy of material, contrast, avoidance of extravagance of manner, suitability, harmony, colour, work founded on that of the past, consonance with nature, lastly truth.

### *Refinement in Design.*

Now if there is one principle in the practice of architecture in the present day which is chiefly wanting, it is the lack of refinement of design. What is the history of architectural art but the history of refinement in the art? What was the one principle that led on from century to century, from style to style, but that of a true artistic feeling—the desire for refinement? Nature, our great guide, never stops in her refinement. We cannot gauge the infinite delicacy of nature, nor her redundancy of life and its variety. Now it is in refinement for architectural work that this expression of life is chiefly shown. According to the material and means at command, there should be the careful expression of artistic power to bring out to the utmost the expression of life. This expression is a great principle of all art, and one to which limits can hardly be assigned. It should animate all your work. Every detail, not only as in the carving of natural ornament, however conventionalised, but in architectural mouldings and the like, should express this, which is the highest gift of Nature—*life*. You see it in all good architectural work, in the branching vault, and the graceful clustered column, from which it springs, in the steady, sturdy, but thrusting buttress; in the varied modelling of carved ornament, or even in the mouldings of a cornice or of a string-course. Whatever in architectural work is endowed with the expression of death is bad art. Good art, on the contrary, is ever imbued with the expression of life.

### *Concentration of Ornament.*

Another principle is that of concentration of ornament, especially for our larger buildings. It is one too much neglected in modern architectural works. For the enjoyment of richness and beauty of ornament there should be a well-designed concentration of it. The eye wearies of, and the mind fails to be interested with, a monotony of richness. Design your building in good proportions—that is, with the proportion that has an expression suiting the character you wish to give your work. Then enrich the chief and most important parts with carefully-designed ornament, rather than sprinkle the whole with it. Here, of course, the scale of the building dictates the character, and it is no fault for a small one to be enriched all over; it is, as it were, a detail itself. The surrounding buildings may give the necessary effect of contrast, but for large and monumental works you will find this concentration of ornament a sound and judicious principle. It is one of the characteristics of the best old buildings.

### *True Use of Detail.*

Another principle is that of the true use of detail. Now the use of detail is not so much in order to show variety, or beauty of design, but that it may enhance the expression, whatever that may designedly be, that is to be given to the whole building. It is surprising how the use of detail, skilfully dealt with, may add scale to a building and enhance its general effect. It is a great but manifest error to suppose that by boldness of detail you make your buildings look large. The reverse is eminently the case. This is obvious. Nevertheless, much modern Gothic work, and not work in that style alone, has been ruined in effect by largeness, if not coarseness, of detail. When your mouldings are large their curves should be especially delicate and subdued. The delicacy of the shadows prevents the effect of any coarseness. Not that it is only detail which, carefully used, gives scale to a building. The multiplication of parts is an arrangement of much use for this purpose. You know how skilfully this was done in Mediæval and in Renaissance buildings. The study of the best designed ancient works will make the intention very apparent. It is a point, again, that you can work out for yourselves in studying such buildings. Compare, for example, Milan Cathedral with our Westminster Abbey, or with York Minster or other great Gothic churches. To give scale by breaking up a wall into stages, as by arcades and the like, is of frequent occurrence, and is of much effect.

### *Balance in Design.*

Another principle on which I would touch is that of symmetry or balance in design. It is one for the most part applicable and of chief use for large buildings and those of monumental character; nevertheless, a house of moderate dimensions, planned on a symmetrical arrangement, may have

\* From a lecture delivered at the Royal Academy on February 20.



a repose and a dignity fitting many sites. Our large Elizabethan houses owe much of their effect externally to this arrangement. It is not a Gothic idea; nevertheless, even for this style, a forced irregularity is always to be avoided. There is no plan for a large house, standing by itself, more dignified and quiet in effect than one with three sides of a quadrangle—the entrance, with its high porch, marking the centre, and bearing, it may be, an enriched panel with shield and other sculptured ornament. The two projecting wings may be of more or less projection, as circumstances dictate. In these symmetrical designs occasional variation from exact balance may well be brought in, as in the somewhat varied positions or sizes of windows, and the like. The general balance may be kept, but, like an unexpected note in music, the variation in no way destroys the general effect of harmony. Symmetry of design denotes care and pains on the part of the designer. It is a courteous manner, and has much to recommend it. Certainly it is a principle founded on nature. It was in constant use in old days.

#### *Economy in the Use of Material.*

Another point is that of a nice economy in the use of material. It is again another point of refinement. The almost brutal strength and ponderous use of material on the Egyptian work, especially as in the Pyramids, has an unpleasant sentiment. Contrast this with the great Gothic buildings in which (with no economy of thought or of skill), through delicate ribs of curved or straight stone, the weight of the hanging vault is held, as if by magic, and passed down into the ground—all with the nicest economy and without any undue waste. Each member does its work. It is Christian liberty and carefulness contrasted with Egyptian slavery and its waste of power. Roman work had some of this Egyptian-like waste. Engineers make their nice calculations, of less and more, and tell us this or that “will stand.” But good architecture is not only “built to stand”—it is built to last from generation to generation. It is no waste to build in such a manner that the eye and the mind are satisfied that centuries may see the building as we see it now; that if but properly tended, and not cruelly dealt with by the more ruthless hand of man, the gentle, slow, natural decay of time will leave the inheritance well nigh untouched. Such strength, combined with a nice economy, should be our aim in designing buildings.

#### *Contrast.*

Another principle is that of well-contrasted work. In all the best architecture you will find a noble simplicity of design, due breadth of surface, contrasted with delicate detail. Neither has its full value without the other. How well the delicate Gothic traceries and niche work, and the lines of the richly carved cornices, contrast with the broad surfaces of the massive buttresses and the smooth ashlar of the walls. It is thus in nature you may see the delicate foliage and the fragile flower contrasting with the buttress-like rocks, smoothed by the hand of time. Some of the best effects of Gothic work are obtained by the use of thick walls and small detail, as in windows where the broad splay is finished by a slender shaft, giving a fine line of light and a delicate shadow, contrasting with the uniform light on the wide breadth of surface of the splayed jamb. Here, again, you can work out this principle for yourself in many ways, both as shown in examples of the past and in designing new buildings or their details. In many churches in the South of France we see the capitals throughout, both large and small, elaborately and richly carved, while the rest of the building is of the sternest simplicity. The capitals form, as it were, rich bands, contrasting with the plain walls and piers. Again you will find that the whole practice of mouldings is derived from the sense of contrasted light and shade. Vigorous, at times even harsh, as in some early Gothic work, the system of mouldings became gradually refined to the most gentle gradations of light and shade, the simple roll moulding eventually turning into what is termed the “wave moulding,” with the most delicate effect of light and shade on its surface. Or, again, in carved work of the great times, the delicate lines of light on the ridges and the edges of the ornament, the half shadows, tender and slight, on which the ornament seems, as it were, to rest, then the sudden deepening and darkening of the background, to throw out in strongest contrast the chief points of the ornament into greater light, to rule over the rest. Well considered and ably executed, contrast is seen everywhere, full of tender grace or decided vigour. The carver has delighted in the effect nature affords everywhere, where there is light to see its subtlety. It is our loss that here, in England, our dark days are so frequent. The want of light has, no doubt, a depressing effect on art. Let us the more carefully enlighten our mind's eye with the thoughtful contemplation of the works of other and sunnier countries and of brighter days of art.

#### *Exaggeration of Design.*

Another suggestion that I would make is a negative one—the avoidance of extravagance of design and manner. For

example, avoid extravagant proportions. One has seen too much of this of late in Gothic work. A shaft only two or three times its diameter in height is surmounted by a capital out of all proportion to that shaft. It is an ugly affectation and in no way commendable. It is an exaggeration that becomes a caricature of good art. There is one kind of strongly-marked proportion, however, that we need hardly fear to carry out in these days—I mean that of considerable height. The controlling exigencies of economy too often prevent our churches, for example, from rising into stately and inspiring proportions. You know the high proportion of that, perhaps the most beautiful of all Gothic churches in the world, Westminster Abbey—the most beautiful as regards the architecture of the interior. The proportion of Westminster Abbey, that of three squares, is excellent, and without any undue exaggeration of height. The extravagance of manner I have spoken of more often lends itself to stumpy proportion, without grace or beauty. It is, like other extravagances, to be avoided.

#### *Suitability to Position.*

Another principle I would bring before you is to suit your design to the place it is meant for, and to the surroundings among which you are to build. With our old buildings in the country one sees an instinctive harmony with the sentiment of the aspect of the natural scenery, or, it may be, a wise contrast with it. It was not apart from this refined feeling that for an old Gothic church, built among hills, you will generally find a low broad tower, with an affinity for the masses of surrounding scenery; while, on the other hand, on the long, low, level lands the pointing spire will have been lifted in contrast to the horizontal line of the plain, a point of relief which the traveller's eye may rest on as he travels through the monotonous level country. In towns you may take pains, in some way, to assimilate your building to those of neighbouring ones of former times, if there be any of sufficient interest to command such respect. It is to our loss that so many towns in which we may have to build are destitute of any character with which we can harmonise our work. Nevertheless, it should be done where possible, not only in the use of local material, but in designing in the local manner, and in harmony with the surrounding buildings. One sees examples of what we must call “bad manners” in this way. The surroundings have been ignored. And here let me say that we need not go abroad to find a style in which to design buildings in England. Let us keep to the “genius loci.” Both in Gothic and Renaissance buildings among us there has been too much copying of a foreign manner unwisely imported from the Continent. Our own English architecture is second to none on the Continent for beauty and poetry of design. If abroad the architecture is more grandiose, yet it often lacks the refinement and the poetry of sentiment of our English work. Though “art speaks the tongue of every clime,” yet, in a sense, we may have a patriotism in our art.

#### *General Harmony.*

Another principle is an obvious one—that of harmony, not only of style, but of character and feeling throughout a building. No eclectic school, which mingles styles incongruously, will ever be long lived or successful. The result, if not one of continuous discord, affords but occasional harmony. It is true that certain styles, as Gothic, lend themselves to strong construction, while Renaissance may be more consonant with great richness and delicacy of detail, as, for example, in plaster-work and the like; but there is a risk of discordant character. It is better not to attempt any such mingling of styles in a complete work, however good the effect of different styles combined may be in an historical building which has been added to from time to time. The mind is satisfied with such an historical building, but it is irritated by the needless conceit of combined styles in a new one. If you look at any complete work of the great periods you will find that they have a unity of feeling and a breadth of effect stamped upon them. Look at our abbeys of Westminster and Tintern. I mention these, for you know them well. The same character is given to the whole building in a marvellous degree. Each building expresses, in its own distinctive manner, the sentiment desired, and there is a true artistic breadth of effect and of idea. You will find this so in all complete buildings of the great periods. They are interpenetrated with one idea, though there is the utmost variety of detail.

#### *The Use of Colour.*

Another and an important part of an architect's work is connected with colour, whether in the use of marble or other constructional colour, or in painting. A fine eye for colour is a natural gift, as much as a fine ear for music; but the love of good colour may, no doubt, be caught from the teaching of nature and the great schools of painting, chiefly those of the fourteenth century and later on. However poor the architectural character of our houses may be, beauty of colour may be obtained for our rooms. There is not enough intelligent interest spent on the subject of the decorative effect of our



houses. I cannot but express the hope that they may be made more beautiful in colour, and that our rooms may show, not only a jumbled collection of old things, however beautiful these may be in themselves, but that intentional design and harmonious architectural character may be given to them.

In the modern decorative treatment of rooms, even those of some dignity, one too often sees mistakes of the most evident kind. For example, it is the frequent modern practice to colour the cornice of a room as if it were part of the ceiling; so if the ceiling is white the cornice is white also, though the walls and woodwork be of colour. Now surely the cornice is the crown of the wall, and not a part of the ceiling. The architectural value of a cornice in a room is to soften off the harsh line that we get without any projecting moulding. This effect is obviously lost if the cornice is coloured like the ceiling, and not like the wall. I would just say, before quitting this part of our subject, that while we now often see "dados" introduced, the use of the frieze is too seldom adopted; yet it is a far better effect to have a well-designed frieze and no dado rather than to have a dado and no frieze. The frieze, and not the dado, was the earlier arrangement. Let me say, in passing, that we should do better, in our domestic work, to follow the style of the Renaissance rather than that which is called "Queen Anne," and which is a very inferior manner at best. Again, there is a fashion for a papered dado. This brings out with undue prominence the poor, thin line of the dado moulding. Now, this dado moulding, or "chair rail," is, as it were, the cornice of the dado, and the whole should be of the same colour. Above this dado moulding there may be a wall-paper of good pattern and colour. Such a paper is best when it is of two or three shades of the same colour, and the spotty and unarchitectural effect of a variously coloured pattern is avoided. Wall-papers were the successors of damask silk hangings, which were usually of one colour, or different shades of the same colour. These silk hangings, it is true, were the successors of tapestry of varied colour, but the pictured scenes of tapestry take one into a higher and altogether different kind of decorative effect. There is nothing in common with tapestry in them, except that both are for the clothing of a wall. Again, one sees other palpable mistakes of colour, such as the use of the "black pointing" of brickwork. We need not add to the gloom and dinginess of our buildings by its use. But what I would chiefly urge on this subject is, that you should not think decorative art in any way beneath your serious attention. Here, again, look at the works of the past, of the great schools of Europe. They will be of more use to you than the imitation of Japanese or Chinese work, the fashion of the day, however ingenious it may be.

#### *The Study of the Past.*

Another principle is the founding designs on the works of the past. Sir Joshua Reynolds said:—"The more extensive your acquaintance is with the works of those who have excelled, the more extensive will be your powers of invention, and, what may appear still more like a paradox, the more original will be your conceptions." This is, I think, eminently true of architectural design. You may well found your design on some previously executed work that has won your respect and admiration; but you make it your own, your mind's eye seeing it, thus or thus, different, wholly altered, from that which produced the idea. It is thus that art hands on, in the tradition of art, the spirit of it, which is immortal.

#### *Consonance with Nature.*

Another principle is that of harmony and consonance with nature. We have incidentally spoken of nature as the guide in all art. It should be eminently so with the creative art of architecture. Though our art, like music, is not an imitative one, yet its characteristics should be those of nature in the spirit, though not in the letter. It is the strength and the delicacy, the refinement and the richness, and the other great attributes of nature which we should endeavour to embody in our works, rather than any exact imitation.

#### *Truth.*

Of truth as expressed in architecture much has been written, and written well, more especially by Mr. Ruskin, to whose teaching we owe so much in the whole field of art. Truth is an essential element of good art. I need not dwell on this part of our subject. Nevertheless, what are many of our new street fronts in the City, and other buildings elsewhere rising around us, but examples of most untruthful architecture? Iron columns and iron girders are concealed by stone columns and thin stone friezes and the like deceptions. It is an unpleasant, and indeed a wretched, style of building, without truth or dignity. Should a fire try the nature of the work, the writhing columns and the bending girders will soon show that they are found wanting in that first necessity of good building—stability—and the disguise will be manifest.

**A Memorial of the late General Earle, who was a native of the city, is to be erected in Liverpool.**

## TESSERÆ.

### *Originality in Architecture.*

SIR SAMUEL FERGUSON.

TO be original is a privilege but rarely vouchsafed to the architect. The laws of epic or dramatic unity impose no shackles on the man of letters at all to be compared with the rigour of those which bind the artist who must express himself regularly in stone. If he can impress with a sense of majesty, if he can elevate and at the same time expand the soul, if he can communicate a perception of elegance, grandeur, and harmony, these will be his triumphs; but in proportion as he rises towards these heights of his art, he will leave individual peculiarities behind, and in the attainment of perfection pass far beyond the reach of any influence of egotism. If he have a style by which his works may be known from those of other men, it will be felt in their general impression, not offered to attention in their details; for of so universal and absolute a character is architectural perfection, such as we may conceive it, that, as in sculpture, the very test of excellence might be that the masterpiece should seem worthy to be the work of any master. But as there is no art in which excellence more demands of the master that he shall mortify the egotistical sentiment, so there is none in which the temptation is greater or the way more easy to mannerism. To understand how this is, consider that within certain elastic limits there are settled proportions for all the parts of a regular elevation. A column, with its base and entablature, comprises from forty to sixty members, all having definite relative ratios of dimension and projection. A window, a niche, a doorway, all have well-defined lengths, breadths, and proportionably associated members. So of the projection of cornices, pilasters, friezes—in short, of all the parts that together make up the structure. To combine these into new masses of structural and utilitarian propriety is the work of original genius. To achieve singularity in detail is the easy resource of mediocrity and vanity. It needs only to exaggerate particular parts, upward, downward, laterally, or in projection. It requires no quality but insensibility to recognised proportions and audacity in departing from them. But the true artist will not condescend to these departures. He knows that in regular art every detail has already been elaborated into the most refined symmetry of which it is susceptible. If he cannot achieve new combinations of masses, he will be content to reproduce existing models, and rather bear the name of a copyist than purchase the reputation of having a style of his own by singularities of detail.

### *St. James's Church, Piccadilly.*

JAMES ELMES.

It may be said of this church, and many of this great architect's works, whoever wishes to acquire a knowledge of architectural construction, which is at the same time scientific, durable, beautiful, and economical, must give his days and nights to the study of the executed works of Wren. Concerning the placing the pulpit, Wren conceived that a moderate voice might be heard 50 feet distant in front of the preacher, 30 feet on each side, and 20 feet behind him; and not so far unless the pronunciation be distinct and equal, without losing the voice at the last word of the sentence, which is commonly emphatical, and if obscured spoils the whole sense. A Frenchman is heard further than an English preacher, because he raises his voice and sinks not his last words. He mentions this subject as being an insufferable fault in the pronunciation of some otherwise excellent preachers, which schoolmasters might correct in the young, as a vicious pronunciation, and not as the Roman orators spoke; for the principal verb is in Latin usually the last word, and if that be lost, what becomes of the sentence? An eminent prelate and many distinguished preachers of our reformed Church have assured me that they have found Wren's three largest and perhaps best churches, those of St. James, Westminster; St. Andrew, Holborn; and St. Bride, Fleet Street, to be incomparably the easiest churches they ever preached in, and wherein they found, by the demeanour of their congregation, they made themselves the best heard and understood.

### *Style in Sculpture.*

DR. WAAGEN.

When we say of a work of sculpture that it possesses "style," the following qualities ought to be implied. The sculptor must have so treated the solid material, such as stone, metal, wood, with which he has to deal, as not to remind the spectator of the nature of the substance employed, but so as rather to suggest to the eye the character of the object imitated—flesh, drapery, or whatever it may be. Further, as we learn from antique sculpture, in the treatment of naked surfaces the muscles should not be represented by prominences so isolated and abrupt as to impair the general breadth, but it should be rather indicated by moderate depressions in broad surfaces.



In drapery, again, to attain the same general breadth of effect in the larger surfaces, which are supposed to be defined by the forms and action of the body, the details of the folds should be represented not by big heavy projections, but by numerous contiguous channellings or markings. The sculptor must, moreover, take care not to attempt in every part of his work as perfect an imitation as the nature of the solid material he employs would admit; but he should adopt a treatment more and more conventional in proportion as the object he has to represent is less and less important, flesh being the most important, for otherwise the degree of illusion sought for in the imitation of flesh cannot be attained, because the imitation of many subordinate objects can be carried much further in the solid material with which the artist has to work. In sculpture "in the round" it is also necessary that the centre of gravity be so observed as to suggest to the spectator the idea of solidity and security. In reliefs, lastly, this rule is to be followed—that whether the work be in high, middle, or low relief, no single portion should project beyond the extreme limit of general relief in each case intended, but the whole profile of the relief should be restricted within a given scale, that again there should not be more than two distances in the composition, so that two figures at the most can stand one behind the other. To attempt greater depth is to invade the province of picturesque composition, and by destroying the idea of relief from an actual plane, to cause indistinctness of outline.

#### Variety of Tints in Nature.

H. F. GOBLET.

It is said by Goethe, in his "Winckelmann und sein Jahrhundert," that the mosaic-workers in Italy, whose business it is to compound in particles of coloured stone placed on a flat surface correct imitations of the works of both nature and art, are accustomed to employ a number of tints nearly one thousand times greater than the 819 tints which has been given on the authority of Meyer. They are said to be in the habitual use of fifteen thousand varieties of hues, each variety comprising fifty tints, and this is a gross sum of seven hundred and fifty thousand changes of colour. It is of little consequence whether or not these tints are all wanted on one occasion, or for one piece of workmanship; the existence of an ability to recognise the differences is all that needs be contended for. Perhaps mosaic-working is not a bad mode of testing the amount of tints that can obtain—at least it may be depended on to a certain extent. The hues of nature in nearly every case graduate by insensible degrees, and the attempt to imitate these hues by particles of coloured stone is an artificial mode of superinducing disjunction or stage, on insensible gradation. By the admission of separation among the tints, we are led to the knowledge of how many are required to imitate any particular effect, and how many are called for in the general representation of nature. Its defect, however, is the following: that while in nature the portion of tint which each stone represents gradates on each side into its neighbour's, in mosaic imitations this tint does not graduate, but is throughout of the same strength, whence, by the practice of mosaic working, we shall not obtain the number of tints really existing in nature till we can find and employ portions of coloured stone no greater in extent than a particle of gradating colour. This we cannot do. Mosaic working, therefore, only gives us a minimum. We have, of necessity, less tints than actually obtain in nature.

#### Competition in Sculpture.

H. WEEKES, R.A.

To competition, in its true sense or meaning, no artist can object, unless, indeed, he is conscious that his efforts will not bear comparison with his contemporaries, and that he is holding a position with the public which his talents do not warrant; in theory it is excellent, but, alas! in practice utterly abortive. Were the English public enlightened on the subject of art, it is just possible that competition might effect good purposes, and that a jury might occasionally be brought together capable of judging correctly on matters of taste; but before this can take place a great change must be undergone. Englishmen must become intimate with the theory and principles of art; its real rudiments must be made an item in education, and take their place with other things taught in our schools; then, and then only, can we expect a generation to spring up capable of perceiving and appreciating the distinction between good and bad. As it now is, the submitting of artists' works to the decision of juries who have not made art their study is worse even than the previous system of monopoly; not that every member of the committees which chance throws together for the consideration of questions connected with art is unqualified for that purpose. It would be strange indeed if, among the number, some were not found of sufficient perception to enable them to come to correct decisions, but the experience of these very men teaches them that they have to contend with the ignorance or indifference of their fellow-jurors, and that their own knowledge and wish to promote talent is insufficient to withstand it. Where, too, a

large majority of jurors are either ignorant or indifferent on the question of comparative excellence, it is easy for the influence of private friendship or personal partiality to creep in, as it is but too apt to do. That this has been the character of nearly all English juries of taste no artist will in his own mind deny, though those who have profited by the system may not care openly to avow it. The result is but too evident: works have been, in nine cases out of ten, entrusted to this one or that one, not in consequence of the superiority of his talent, but owing to indirect or personal interest.

Philibert Delorme.

PROFESSOR HENRY MORLEY.

In the works of Ronsard there is an anecdote concerning Philibert Delorme which illustrates the character of the great architect, and the temper of authority and command which ill became a man of genius, and before which the spirit of Master Bernard of the Tuileries was certainly not likely to submit. Ronsard one day was about to pass into the Tuileries in the suite of the queen-mother, when Delorme caused the door to be shut in his face. The Sieur de Sarlan caused it to be immediately opened to him, and Ronsard, entering, took up a piece of chalk, and wrote in capitals upon the door, before the face of the church pluralist and architect, "FORT REVERENT HABE." Habe, equivalent to Have, was a term of reproach, meaning a meagre person, "a wrinkled or scraggy old woman," as the dictionary has it, and the term probably applied with some force to the person of the architect, while the "Very Reverend" might be applied sarcastically to his clerical revenues, or to his overbearing claim on reverence. It will have been observed that Palissy speaks of the architect always as "commanding." Delorme, offended by Ronsard's inscription, brought his complaint before the queen; but the offender, being summoned to answer for himself, informed Her Majesty that what he had written was not a scurrilous insult, but a delicate reproof. "Fort Reverent Habe" are not French words, madame, but the commencement of a verse out of Ausonius: *Fortunam reverenter habe*—Be modest in prosperity—words profitable to be read by all men to whom fortune has been kind."

#### A Greek Mosaic.

EDWARD DODWELL, F.S.A.

A Greek having observed us taking sketches at Salona, said that if we would follow him he would show us a Hellenic picture. He accordingly conducted us to a cellar in the town and having removed some barrels and lumber, discovered a large mosaic pavement, coarsely worked, representing various animals, as dogs, horses, and tigers. Pliny says the Greeks were the inventors of mosaic pavements; but there is now very little remaining of it in Greece. Indeed this is the only entire specimen I have seen. There is one at Orchomenos, in Boeotia; but it was covered with water when I was at that place, and was not visible. There are also some small remains of mosaic pavements at Athens and at Delos.

#### English Wall Painting.

J. G. WALLER.

The methods employed by our mediæval artists were of simplest character, particularly in the wall paintings of our churches. The latter were executed in "tempera," an Italian term represented by the English "distemper." It means no more than that which mixes or tempers the colours, and might be applied to any vehicle whatever. But as generally understood, in former times as now, it is applied to that vehicle made of parchment size, or the superior egg medium, *i.e.*, eggs beat up with the juice of shoots of the fig-tree, but vinegar can also be used with the same effect. We have proof that both species of tempera were known and practised in England; but the former must always have been that used on walls, and it is this that we see in our mediæval churches. Both are of the greatest antiquity, known to Greeks and Romans, and also to the ancient Egyptians. Under reasonable conditions it is very durable, as, indeed, is shown by works executed in this manner, enduring for many centuries the humidity of our climate and all kinds of neglect. As regards the superior egg medium, it was chiefly employed in painting upon wood or panel, and when in our records we see the term "tabula," it either refers to a movable picture, as above an altar, or to those executed in panels on a screen. The practice in Italy did not differ in this respect. The use of the term "tempera," as restricted to the above processes, was gradual, as even Vasari occasionally applies it even to oil as "tempering" colours. But when the term "fresco" was in familiar use for painting on the *fresco* or wet plaster, and oil vehicles became general, it naturally was convenient to keep the word "tempera" to the process when it was first applied. Our archæologists, though often corrected, still frequently call our mediæval wall paintings "frescoes." It is obviously most improper, as even the "fresco buono" of the Italians was not completely developed until the fourteenth century, though the system was known to the Greeks and Romans.



## NOTES AND COMMENTS.

HER MAJESTY has placed at the disposal of the Executive Council of the Inventions Exhibition the fine collection of historic musical instruments of which a portion was exhibited in 1872, and other objects relating to music which may be available. The group will resemble in its main features the loan collection which was held at South Kensington in 1872, and will comprise historic musical instruments, manuscripts, paintings, engravings, and appliances of all kinds relative to music.

AN interesting course of Cantor Lectures on "Carving and Furniture" will be commenced next week at the Society of Arts, by Mr. J. HUNGERFORD POLLEN, late of the South Kensington Museum, and the author of the large catalogue and the handbook on the furniture and woodwork collections of the Museum. The course will consist of four lectures, to be given on March 9, 16, 23, and 30. Lecture I. will deal with the types and fashions of the wood carver's art; lecture II. will be devoted to the Renaissance; while the subject of lectures III. and IV. will be the Age of Gibbons, Boule, and that of their successors.

THE French Society of Architects are about to form a committee for the purpose of taking cognizance of everything connected with public competitions in France. The members are to study all announcements, and to transmit those which are likely to have interest for the society to the central council, and, whenever necessary, the subjects are to be brought under the consideration of the contemplated association for the defence of French architects. The committee will also give information and advice to municipal and other institutors of competitions; and it is considered that, from the position of the French Society of Architects, much aid can in this way be rendered to public bodies, for the question of competition is said to be one of general interest and national honour. As there is a mutual respect between organisations in France, the society is likely to be much more influential in controlling competitions than the Institute committee has been in this country.

DR. POLE has been associated as secretary with all the late Royal Commissions on Water Supply, and he is therefore in a position to speak with authority on the subject. In his late lecture at the Institution of Civil Engineers, it was explained that the quantity of water that is requisite for domestic use is not more than about 10 or 12 gallons per head per diem, but to provide for other purposes about 25 gallons per head is usually allowed. It has been ascertained that in towns the consumption of water is not uniform. It is greater in summer than in winter, and it is much greater at some hours in the day than at others. Assuming the average rate of supply over the whole year to be 100 gallons, the actual rate at some periods will rise as high as 235 gallons, and it was recommended that in determining the sizes of supply mains the latter figure should be taken. A constant supply has been opposed on the ground of wilful or careless waste, but it appears that there need be little fear of waste. Dr. POLE in the course of his lecture mentioned an interesting historical fact, namely, that it was to the special cultivation of the hydraulic branch of engineering that civil engineers owed their origin as a separate and well-defined body of practitioners distinct from military engineers.

It is anticipated that the great church which crowns the hill of Montmartre will be completed in 1889, the year of the proposed international exhibition in Paris. But that is contingent on the amount of subscriptions reaching the exchequer. Since 1875 the offerings have amounted to 15,183,824 frs., and at least twelve millions more are needed. Yet, in spite of the cost the building is remarkable for its severity, and it might be said of the part completed that it is destitute of ornament. The construction is carried on with much difficulty owing to the want of funds, as a contract for no more than a small portion can be undertaken at a time. It is also to be feared that extra cost will hereafter arise owing to the rain, which percolates through the exposed works. An energetic endeavour should be made to have a larger portion covered-in without delay.

GLASGOW is so entirely a stone-built city, it is difficult to realise that houses could have existed there of any other material. But according to a lecture delivered by Dr. F. W. CLARK, on Tuesday, the city has been rather backward in its civilisation, and the inhabitants were no better housed at the end of the fifteenth century than were the dwellers in a Highland or Irish village at the close of the last century. Gradually, stone having superseded wood, houses of more than one storey became common, though they never attained the altitude of the houses in Edinburgh. The reason given for the difference is that Glasgow was never a walled city, and that therefore it was not necessary to economise space.

THE French Government have resolved that the national factories shall be worthily represented in the approaching Antwerp Exhibition. There will be a special chamber of about three hundred mètres square, which will be appropriated to the pottery of Sèvres, the tapestry of Beauvais and Gobelins, and works in mosaic. One of the grandest pieces among the tapestry will be the *Apotheosis of Homer*. It has been announced that there will be 286 Austrian exhibitors, forming six groups, and their goods will occupy 2,800 mètres. The decoration of the section will be undertaken by able artists, and nothing will be left undone to make Austria and Hungary one of the most attractive of the divisions. The King of the BELGIANS has proposed that the exhibition should be utilised as an opportunity to form an international congress on commercial law, and has nominated a commission to make the preliminary arrangements.

A PNEUMATIC tube is likely to be laid down for the conveyance of letters between the post-offices of Paris and Brussels. It has been calculated that letters can be transmitted between the two cities in about half an hour. But a much more remarkable project is one by M. BERBER, who proposes to establish two tubes between Paris and London, by means of which a letter or a post-card could be carried from one city to the other in an hour. The cost is estimated at about forty millions of francs.

THE following are the principles which MR. HAITE suggested should regulate the decoration of ceilings in a paper which was read at the Building Exhibition:—1st, That the ceiling being a flat surface, we should not seek to give it any other apparent form, therefore all perspective, fore-shortening, or representation of light and shade should be excluded; 2nd, that the result of any decoration depends more upon the colour than on the form of ornament, and that colour should take the place of ornament; 3rd, that the ceiling having no other structural purpose but a covering, allows for a freer and wider range of fancy in the decoration; 4th, the use of figure, or any pictorial representation whatever, is not applicable; 5th, that any scheme of decoration, either of diaper or border treatment, should invariably spring from the centre; 6th, that the breaking up into panels, by mouldings or painted divisions allows of more varied treatment in colour; and 7th, that the most satisfactory decoration of the ceiling-flat as one panel by other than handwork was the diaper, terminating in a border with corners.

ACCORDING to the official statistics, the earthquakes in the province of Granada have caused, since Christmas, the destruction of 3,342 houses, and 2,138 have been more or less injured. The deaths have numbered 690, and 1,173 people have sustained wounds. As slight movements are occasionally felt, it is not surprising that there is a general state of consternation in Granada.

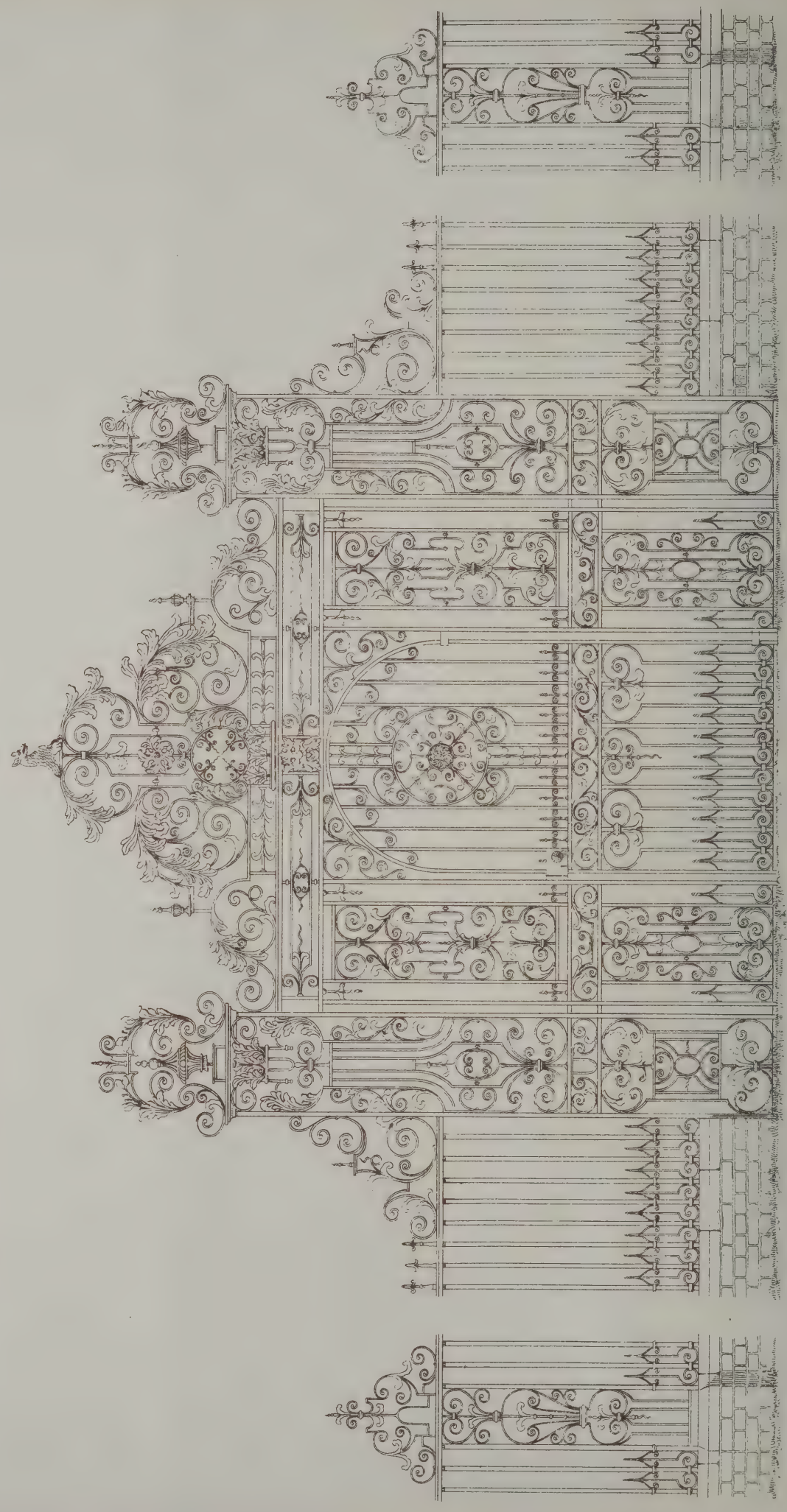
BELGIAN connoisseurs are as fallible as their brethren elsewhere. A portrait was lately purchased for the museum at Antwerp which was supposed to have been painted by VANDYCK. Doubts having arisen about its worth, a commission was appointed consisting of MM. DE TACVE, LAMPE, and GEETS to inquire into the matter. The three experts have unanimously decided that the portrait is not a work of VANDYCK, and that it is a very worthless imitation of the master. It is not stated whether the purchase money will be returned to the Government.







*Magdalen Drawing of the OLD WROUGHT IRON GATE.  
Scraplost Hall near Leicestershire*



C. & A. Maud

Scale of Feet  
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Standard & Halling

Speltwood & Co. Ltd. London

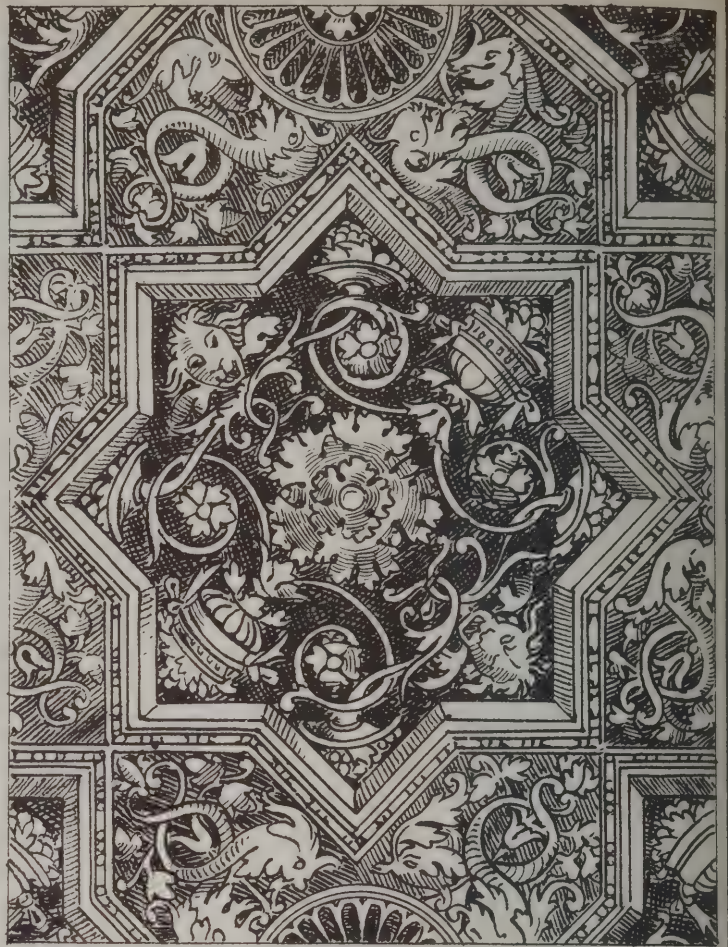




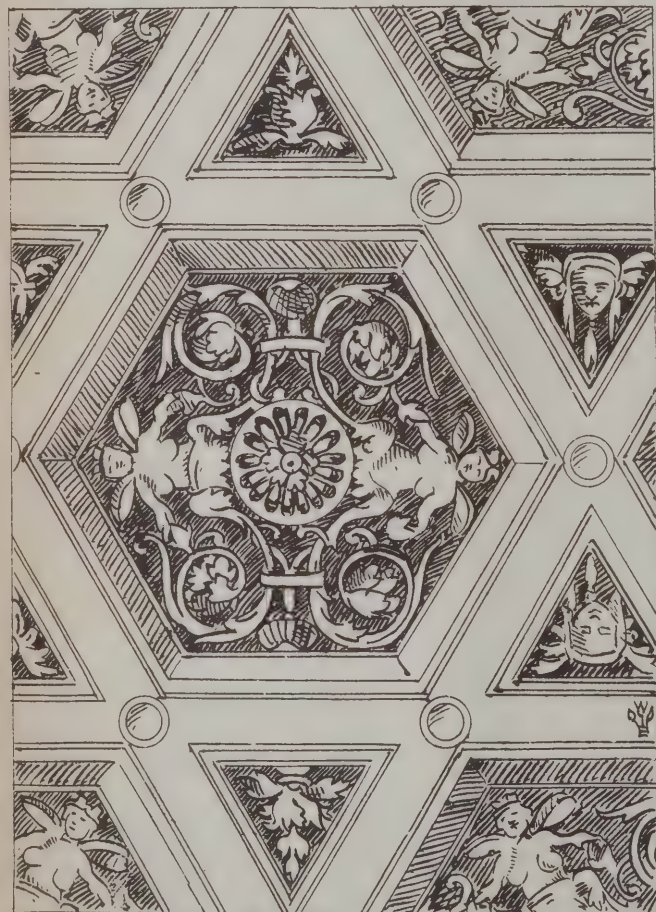




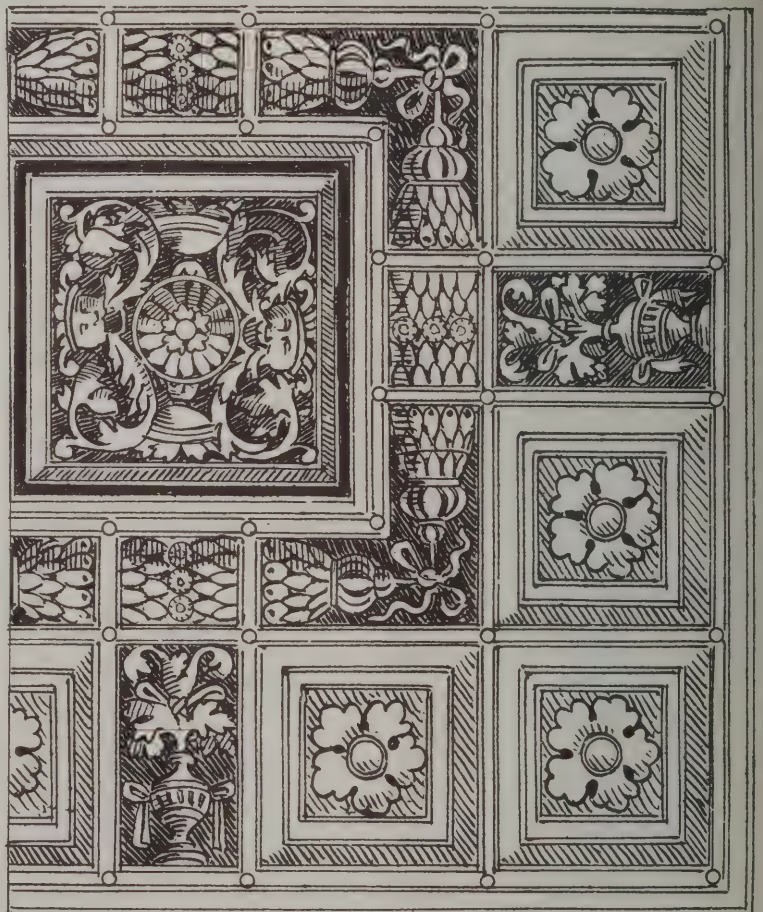
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2



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4

Owen W. Davis, del.

RENAISSANCE CEILINGS.









THE GRACES, A DECORATIVE GROUP.

INK PHOTO, SPRAGUE & CO., LONDON.





A SEVRES BOWL.

BY M. L. R. CARRIER-BELLEUSE.









BAGNALL HALL, Staffs.

JOHN KEATS ESQ.

Alterations and Additions.

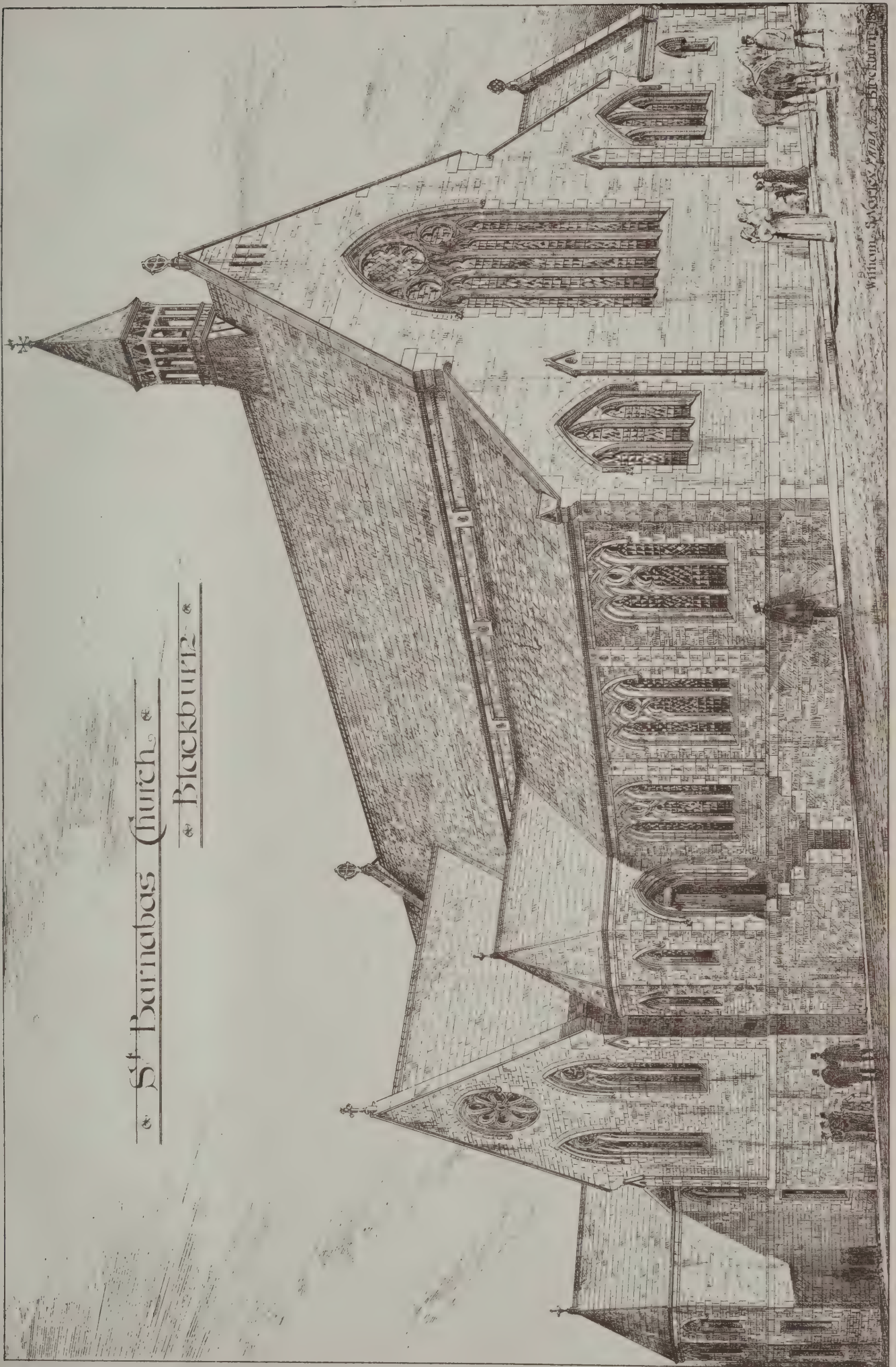
Wm. Sugden & Son, Architects.  
14, Abchurch Lane.







St Barnabas Church  
Blackburn









## ILLUSTRATIONS.

I.—THE GRACES. II.—A SEVRES BOWL.

THE present art director of the Sèvres factory is M. CARRIER-BELLEUSE, under whom the pottery has upheld its reputation for beauty. As a sculptor of high standing, the director has been able to impart a better style of modelling to the general work, and to show that elegance can mean something more than prettiness. The author of the works reproduced in the plates is one of the director's sons, and has had the rare fortune of carrying off the principal prize offered by the French Government in two successive years; indeed, the feat is without a parallel in the annals of Sèvres. The illustrations will suggest the kind of work which is now adopted in the factory, and the influence of M. CARRIER-BELLEUSE the elder can be traced in the figures, which are worthy of CANOVA.

BAGNALL HALL.

WARD, in his old history of the borough of Stoke-on-Trent, says Bagnall (formerly Bagenhall) is a hamlet outlying north of Eaves, and in a different hundred (Totmonslow). It is an elevated moorland tract, but now wholly enclosed and cultivated, or planted, containing 1,650 acres, including some extensive woodlands. The small village of Bagnall is seated near the centre of the township, where a neat modern chapel of stone, with a tower, was erected in 1834, in place of an old one, which had a belfry of wood; it is distant from the mother-church of Stoke (of which it was doubtless one of the elder daughters) some four miles.

In the reign of Stephen, or Henry II., Bagnall was held by Ivo de Pantune, who granted it to Adam de Audley, by whose descendants it was incorporated with their manor of Horton. It was also in remote times the seat of a family who took their name from the place. In after ages it was occupied by a family of the name of Murhall, who were probably seated there as early as the reign of Henry III., for William Murell then held a virgate of land in Shelton, in fee-farm, as park-keeper of Castle Cliff. William Murhall, Esq., a magistrate of the county, who lived there in the year 1745, is the subject of traditional fame for the summary and savage justice he inflicted upon one of the Young Pretender's Scotch stragglers. The principal house of the village is a good old mansion of stone, the ancient seat of the Murhalls; and at a short distance is Greenwood Hall, formerly belonging to Judge Bradshaw, president of the High Court of Justice by the sentence of which the unhappy Charles Stuart was carried to the scaffold.

Strange legends survive on the country side of the old days when Bagnall was a bleak, desolate moor, relieved by one or two semi-fortified farmhouses, or a wayside inn more famous for murder than for good cheer, and infested by cut-throats and highwaymen, coiners, and other citizens of "Alsatia." Mr. JOHN SLEIGH's excellent "History of Leek" furnishes some curious particulars. With regard to the particular incident alluded to by old WARD, tradition hath it variously that it was to avenge a stain on his family honour and a theft of arms from his "mansion" that led Squire MURHALL to hang upon a sign-post near Leek the rebel whom he captured, and afterwards to "flay him like a calf and send his skin to the tanyard to be made into leather for a drumhead." The good Christian perpetrator of the reprisal sleeps in the neighbouring churchyard of Endon, under the epitaph, "Part of what I possessed is left to others, and what I gave away remains with me."

The ancient inscriptions ("I. M. 1603," and "I. M. rebuilt 1777") on the old or north front of Bagnall Hall are relics of the MURHALLS' occupation. The existing south front has no features of interest. Mr. KEATS, the present owner, is adding to it two bays in the old part, and is extending the hall proper to receive another similar bay, as indicated in our illustration. The further annexe on the east side, with the central tower, is being built upon the foundations of an old farm building, which was recently taken down owing to its dilapidated condition.

The works are being carried out under the direction of Messrs. W. SUGDEN & SON, architects, of Leek. Mr. JAMES HEATH, of Endon, is the builder.

ST. BARNABAS CHURCH, BLACKBURN.

THE plan of the church consists of nave, side aisles, chancel, transepts, organ chamber, choir and clergy vestries, with a large parish-room under the chancel. The number of sittings, which are all free, is 722. The stone is being procured from the Yorkshire quarries. Wood blocks are to be laid in the aisles and chancel. The contract has been let for the sum of 6,098*l.* to Messrs. MARSHALL & DENT, of Blackburn, and Messrs. MERCER BROS., also of Blackburn, have been entrusted with the contract for hot-water apparatus. The work is being rapidly pushed on under the superintendence of the architect, Mr. WILLIAM S. VARLEY, F.R.I.B.A.

RENAISSANCE CEILINGS.

THE illustrations are specimens of those which are to appear in the volume called "Art and Work," by Mr. OWEN W. DAVIS. It will be seen that every inch of space is occupied, and all the plates are no less full. The ceilings shown have been designed by SEBASTIAN SERLIO, or SERLY, born at Bologna 1475. He was one of the artists that FRANCIS I. invited to Paris to establish the new-born Classic art in France. The designs are taken from his "Books of Architecture," Venice, 1551-84.

OLD WROUGHT-IRON GATE, SCRAPTOFT HALL.

THIS gate forms the entrance to Scraftoft Hall, a building of the eighteenth century, now the seat of Captain BARCLAY, and which stands at about five miles from Leicester. The small hand-gate, published in our issue of February 7, is at the side entrance to grounds of the above hall. The original measured drawing was by Mr. ARTHUR H. HIND.

## SOMERHILL, KENT.\*

SOMERHILL (formerly written Summer Hill) was built by Richard de Burgh, Earl of Clanricarde and Baron Somerhill (died 1636), on the site of a house which had belonged to Sir Philip Sidney. It appears to have been in course of erection from 1609. The original lead stack-pipe heads bear the date thus—<sup>1611</sup><sub>C</sub>. Cromwell bestowed the house upon

President Bradshawe, and afterwards it passed to Lady Muskerri, celebrated by Count Grammont as the "Babylonian Princess." The walling is of native stone; the chimney-stacks alone are of red brick, and the roofs are covered with tiles. It is a very perfect specimen of the Jacobean style, has a plain exterior, mainly relying for effect upon good proportion; but within the house there is a greater amount of detail, and some elaborate carved oak work, notably upon the justice-room chimney-piece. The mouldings of the wood panelling are characteristic of the date, and exceedingly effective.

The house is approached from the west side, not shown in the view. The entrance being in the centre of the main house, a porch leads at once into the hall, which runs through the whole depth of the house, and its east windows are seen under the third gable from the left in the view. Above the hall is the saloon, now used as a drawing-room, 48 feet by 24 feet, which runs up through two storeys, and divides the main house completely in two. On the south of the hall are the drawing-rooms, and above these the principal bedrooms. On the north of the hall are the dining-room, the private rooms, and the principal servants' rooms, the kitchen and offices being in the basement, which extends under the north portion only of the main house. North of the main house is the quadrangle of low buildings shown in the centre of the view. Here are the numerous offices of a large house, the brewery, bakehouse, servants' sitting-room, larder, stores, &c. In the centre is an open basin of spring water, on the north side the stable and appendages; on the south and east of the house are arranged the formal gardens, enclosed by terrace walls.

The library, a large apartment upon the south side of the main house, was reconstructed out of other rooms from designs by Sir Jeffry Wyatville. This room is about 70 feet in length. Some alterations have also been made by Mr. P. C. Hardwick, but without affecting the exterior, which has remained nearly untouched, until in 1878 Sir Julian Goldsmid consulted Mr. Thomas Henry Watson, architect, respecting the additions he required to the house. These were carried out from 1879 to 1881.

Certain alterations were made in the main house; many of

\* See Illustration in *The Architect*, February 28,



the offices were converted to other uses, and a suite of apartments formed for the young ladies in the south wing. Dressing and bath-rooms were formed to complete the own rooms suite. Bachelors' rooms on the east, and additional servants' rooms on the north and west sides of the quadrangle, but all this without disturbing the original appearance of the building.

The new works consist on the west side of "The New Court," containing stores and sheds for wood, coals, coke, &c., rooms for the second coachman, and mess-room for the stablemen, clock-tower, &c. None of these appear in the view. The "North Court," a stable-yard, carriage-houses for twenty carriages, stables for twenty horses (the old stables for ten horses set in order), washing boxes, washing place for carriages, and harness-room. These occupy the ground-floor of the J-shaped additions, which form the right-hand part of the view. Above the carriage-houses are suites of visitors' rooms; above these, rooms for valets and maids, with separate stairs. A carved oak stair leads from the bedroom floor to a hall or lounging-room with a large bay-window, and from this level down to the gardens, where a small doorway gives exit to a terrace formed for tennis-courts, both turfed and asphalted, on the north side of the block. The natural slope of the ground admitted of the formation of a billiard-room, 44 feet by 22 feet, under the north carriage-house, and smoking-room, &c., at the same level. These extend to the second gable on the right of the view. Beyond, at the level of the oriel, are the stables, over them the head coachman's rooms, and rooms for eight stablemen, bath-room, &c. Above are the lofts. Under the stables, approached from the garden side, are rooms for gardeners and stores for implements. The east side of the new wing is 77 feet, the north return is 160 feet in length.

### THE BLENHEIM PALACE PICTURES.

DURING the past year memorials had been sent by the Royal Academicians and other painters to the Prime Minister advocating the purchase of the collection belonging to the Duke of Marlborough, or a part of it, and in consequence the "Ansidei" Raphael and the portrait of *Charles I.* are now the property of the nation. The following is the memorial of the Royal Academy:—

The rumour that a large number of the pictures, which have hitherto been the honour of Blenheim Palace, are about to be offered for sale, pictures amongst which are counted works unique in their excellence and beauty, has strongly moved the artistic community in this country. To this emotion we, the members of the Royal Academy, having in trust the interests of art in England, feel it our duty to give emphatic and earnest expression. We are acquainted, indeed, sir, with your own enlightened love for all that is beautiful in art, and have no doubt that you share our deep desire that such inestimable possessions be not lost to us, and that we be spared the humiliation of seeing them pass into those foreign hands which are, as we too well know, eager to receive them. But we are moved also that, in these days of keen and ever-growing competition, considerable pecuniary sacrifices will be needed to obtain this result, and we should not be faithful to our trust did we not bring to bear the whole weight of the opinion of this representative body to the strengthening of the hands of Her Majesty's Government in an emergency of such gravity. It is not needful to insist on the importance and variety of the works which are about to be offered for sale. You, sir, are well acquainted with them. Nevertheless, three or four of them may be here alluded to, not only because of their surpassing merit, but as corresponding to definite and most regrettable wants in our national collection.

In the first rank is the large *Holy Family*, by Raphael, a work produced in that happy period in which the reverent purity and the serene grace of the master's earliest work are already mellowing into the fuller dignity of his middle style.

Hardly less important is the equestrian portrait of *Charles I.*, by Van Dyck. This picture of an English king painted by an artist whose name is so intimately connected with the English people, and from whose hand our gallery does not boast a single full length portrait, will not, we feel assured, be suffered to leave this country.

From the hand of Rubens, again, we possess no portrait of full dimensions; in those of the artist and his family are two of Helena Forman, his second wife: magnificent samples of his art are here brought within our reach, by the side of examples not less striking of his powers of invention and the magic of his brush.

The companion memorial was as follows:—The announcement that a celebrated historic collection is about to be dispersed has awakened feelings of deep and widespread concern. The pictures presented to the Duke of Marlborough by foreign States, in token of their admiration and gratitude for his services, and which have served to adorn his palace at Blenheim, have almost come to be regarded as national heir-

looms. They have been associated in the minds of succeeding generations of Englishmen with some of the most brilliant pages of their country's record. Even more important than the associations connected with them is the intrinsic artistic excellence of many of these pictures. They stand as landmarks in the history of art. Students of painting from foreign countries, and those who find delight in contemplating the masterpieces of the renowned Italian and Flemish schools, have always eagerly sought admission to the gallery at Blenheim. Hence the excitement created on the continent by the rumour of its approaching sale. The directors of every continental museum are on the alert, and all hope that some of the treasures of the Marlborough collection will be added to their own walls.

It is this pressing danger that has moved the undersigned to implore you, sir, to furnish the means whereby the principal works of this collection may be secured to the nation, to add to the glory of our National Gallery, and serve as examples for study to our artists. A stigma would be attached to this generation, if, having these works in our possession, they are now allowed to leave our shores. But, knowing the deep interest you have always manifested in the advancement of the arts of design, and in the elevation of the national taste—so vital to the growth of the national industries—we confidently hope that by your instrumentality an event so disastrous as the loss to the country of the Blenheim masterpieces will be averted.

### A CHALDEAN TEMPLE.

IN the first of his new series of lectures on Assyrian and Babylonian antiquities, at the British Museum, Mr. W. St. Chad Boscawen treated of the "Chaldean Temple: its Construction, Symbolism, and Services." In commencing his lecture, Mr. Boscawen said that it was very important to understand the high position which the temple occupied in Oriental history. It was not only the germ of the ancient city, but its walls and treasure chambers reflected its history. If we glanced at the plans of some of the most famous temples of the East, we could see in their ruins a by no means meagre history of the people worshipping there. This had been shown by the great Egyptologist, M. Mariette, who in his plan of the temple of Kamak had coloured differently the work of each dynasty, and it could be seen at a glance how at periods of wealth and power great and lavish works were carried out, and how in periods of decay and weakness even the work of necessary repair was left undone. It was the same with the Jewish and the Chaldean temples; they reflected in their history the history of the Jewish people. The discoveries made during the last few years in Chaldea had resulted in the recovery of much important information regarding the temples of that land, and the explorations carried out by Mr. Hormuzd Rassam had been specially prolific. The discovery of the site of the ancient city of Sepharvaim had not only resulted in the discovery and exploration of what we may certainly regard as one of the oldest, if not the oldest, temple in Chaldea, and in the recovery of inscriptions which revealed to us the nature of the services there; but, in addition, it was important to note that it was from this city that the Samaritan colonists came who so rapidly became affiliated to Judaism. The construction of the temples explored by Sir Henry Layard at Nimroud and by Mr. Rassam at Ballawat and Aboo Hubba was then explained. The general arrangement was an outer hall or Naos, called by Jews and Chaldeans alike Hekal, or "the palace," and an inner and more holy chamber called Parakkee, or "the most holy place." The word "parakkee" had passed through various phases. First, it was the altar, the local holy place, then the holy place of the temple, and, lastly, the harem of the palace, as the most secluded portion of the royal residence. By means of a recently discovered inscription, we learned that the Chaldean Temple was built with the most holy place at the east end. Many of the ceremonies were common alike to the Jews and the Chaldeans. Mr. Boscawen described the symbolism employed in the decoration of the temple and of the idols. This portion of the lecture was illustrated by the exhibition of a number of enlarged drawings representing the sun god and solar hero Gisdhubar, also the gods of fire and pestilence. The former was represented a long-haired, with luxuriant beard representing his rays, and figured as a giant strangling a lion—illustrative of one of the chief episodes in the poem of the "Labours of Gisdhubar." The figure of the fire-god brought this duty in close connection with the solar hero, like whom he had luxuriant hair. But more important still, in a statue now in the Louvre, this deity is represented as holding a long conical staff, which, the lecturer pointed out, was clearly the fire-stick, and indicated the existence among the Babylonians of a myth similar to that of Prometheus among the Aryans. The god of pestilence was represented as lion-headed, in agreement with the epithet of the Great Devourer applied to him. Mr. Boscawen then proceeded to speak of the



robes worn by the priests, such as the ephod, girdle, breastplate, &c. He then gave an account of the various duties and uses which the temple and its servants were employed in. The priests were the scribes and the teachers of the people, and Mr. Rassam's explorations in the Birs Nimroud showed that there had existed there a great library containing earlier and later editions than the Assyrian we now possess of such important works as the Deluge Tablet and the Creation stories.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### ACADEMY "GHOSTS."

WE promised last week to give the statement by which the unfortunate Mr. Reinagle hoped to support his cause against the Royal Academy, from which he had been justly expelled. The following is the document, which has a special interest for our readers from the reference to Professor Cockerell:—

The Royal Academy is without a charter, and it is only under a charter that laws of any society can be recognised and enforced by the authority of our Constitution. The instrument of institution, or deed, of the Academy, requires that every Academician shall uphold the institution to his utmost. They are all desired to maintain, by their works, the annual exhibitions. A member independent of the arts, who was elected the year before I became an Academician, has exhibited but once for the last twenty or twenty-one years. Is this upholding? Nevertheless, he is allowed to retain his place amongst the forty, to the exclusion of a more worthy successor.

Our Royal Academy architects set no example for rising young men. It is a rare event to see a design by an architect who has R.A. appended to his name; and then the work is most commonly done for him by a skilful youth, a water-colour artist fills in the shadows and paints a sky and background. This, then, is an accommodating way in which Academicians are allowed to impose other men's works for their own, which is winked at by their body.

Sir T. Lawrence, while President of the Academy, committed a great number of such impositions (if I may so call these substitutions) upon his employers. I have seen many whole-length portraits exhibited as his own works which had been painted by his helper, Mr. Munday, whom I recommended to him as a person of great abilities, the head alone being by Lawrence.

Ramsay received an order from King George III. to paint ninety pairs of his whole-length portraits of the King and Queen. My father was his apprentice; and, at the expiration of his pupilage, Ramsay contracted with my father to paint them for fifty guineas the pair. For these pictures, which passed as his own work, Ramsay received from Government 200 guineas the pair, although he remained in Rome, studying Latin and Greek inscriptions, all the while when he was supposed to be painting the portraits. *En passant*, I may say that I wrote the life of Ramsay in Cunningham's "Lives of the Painters," which he promised to state to the public, but this he always omitted to do, and received any merit which accrued from it as his own.

Sir Wm. Beechey was commanded to paint a small copy for Her Majesty Queen Charlotte of his large picture *George III. and the Prince of Wales Reviewing the Troops in Hyde Park*—the picture now in Hampton Court Palace. I did the copy, which was about 18 inches long for him in his studio or show-room in George Street, Hanover Square. Beechey showed me no sort of hospitality. His man-servant very commonly came in and told him dinner was ready. No refreshment was ever once tendered to me. When I had finished the copy, we came to payment. He was thunderstruck when I told him 80 guineas was what he had to pay me. He said he expected I would have done it for 20*l.* as we were brother artists. I reminded him that I had been treated contemptuously, as unfit to sit at his table; for during the whole six weeks it occupied me not even a bit of bread had been offered, though I worked from 10 a.m. till 7 p.m., it being summer time. The Queen paid 120 guineas for the copy, believing it to have been painted by Sir William, and I know he received great encomiums for it.

My next contact with an R.A. was with Mr. Chantrey, afterwards knighted. Being a Derbyshire man, and ambitious of a fame for versatility, he engaged to make a set of drawings for a topographical work on Derbyshire. His sketches were shown to me by him at our interview at Mr. Wm. Cook's, the engraver, then living in Pentonville. They were nearly unintelligible scratches: words stood in most cases for drawn objects, as

trees, a tree, a wall, a road, a path, figures, ducks, running water, a woman, children, stones, rough stone wall, and so on. I agreed to make proper drawings from them, at the charge of 6 guineas each. When the first six were engraved by W. Cook, and I was invited to meet Chantrey at his (Cook's) house, to my astonishment Chantrey's name was engraved at the foot as the artist, and not mine. I expostulated in vain. He had the ambition of being supposed to be a good landscape draughtsman. He wished me to continue the work, but I refused to do another unless my name as the actual artist, and not his, was engraved. This caused a silent coldness for ten years, when he, of his own accord, took me by the hand, and hoped I had forgotten all that happened many years ago. I said I could forgive. We were very friendly during the rest of his life.

Sir Francis Chantrey exhibited, among other works of sculpture some years ago, the group of two children asleep in each other's arms, lying on a mattress, now in Lichfield Cathedral. The Italian artist died some few years since who told me, as he had told numbers of other persons, that the composition, the model, and the work in marble, were all three his doing. The manner in which Sir F. Chantrey behaved to him, his want of liberality in not confessing whence he had the design, and the daring to call the work his own, affected this poor helping sculptor deeply. He said the powerful reputation Chantrey had in the world caused his tale of truth to be totally disbelieved. Would the Academy have dared to impugn this Royal Academician?

Hoppner engaged me to copy his half-length portrait of W. Pitt. I did thirteen for him, and, during his absence in the country recreating, I also painted four whole-lengths from his portrait, each in four days, though I had never seen and never did see Mr. Pitt. I was paid 20 guineas for each half-length, for which he got 120 guineas. I had 35 guineas for each whole-length, the price he arbitrarily fixed, and he got 200 guineas. One of these whole-lengths was bought by the Duke of Gloucester; another hangs in Grocers' Hall. All passed as his painting, and were sold by him as his works.

Count Woronzoff, the Russian Minister, had the first half-length copy. Hoppner pledged his word to deliver a copy done by himself. He came to me, and desired that I would not vein the giallo antico column, as he had a particular reason. I wondered why so insignificant a part should not be left to me, but I found this was done that he might be able to say he painted it. Then the Count desired him to sign it, which he did.

The late Mr. Constable, R.A., a pupil of mine, exhibited a landscape in the large room of Somerset House, in which I painted a group of cattle, showing the breath steaming from their mouths; I did them with a palette knife to imitate his manner, and he kindly fathered them.

I think enough of examples have been adduced to show that upon points of honesty the academic conscience has not the reality of being very tender; at the same time, it has often been shown to be of the most accommodating kind whenever members of the exclusive or anti-reform party were concerned; and again and again the laws of the Academy have been disregarded or broken through altogether: instances of combination amongst the forty to carry some purpose unworthy of those who follow so high and enlightened a study as art, and subversive of all that should be the aim and object of the society, are plentiful since its first foundation. As examples may be mentioned the case of R. Strange, the celebrated engraver; the Academy refused to admit him, although they directly after elected Bartolozzi, the *protégé* of Lord Bute and Mr. Dalton, pretending that he was a painter. Barry was a victim to a similar combination, and was actually expelled on account of his persevering attempts at improving the school: he was refused a copy of the charges made against him precisely as I have been. Mr. Cockerell once brought forward a proposition that foreign artists should be elected honorary members; this was negatived by a large majority, but Mr. Cockerell published a pamphlet upon the subject, which created such enmity against him that he also narrowly escaped expulsion. I have always had the honour to belong to the liberal party; and about twelve years ago I again introduced the proposition that line engravers should be admitted to the Royal Academyship; it was lost by a minority of seven out of twenty-four votes. For a length of time it has been evident to me that I was an obnoxious member; and after giving me various hints by hanging my pictures in unfavourable positions, and other insignificant slights, at length the opportunity occurred for getting rid of me.

Messrs. R. W. Winfield & Co. have just placed in the south wall of Queensbury Church a memorial window to the late Mr. W. Foster, of Hornby Castle and Queensbury, the subjects of which are:—*Abraham, at the Command of God, leaving Mesopotamia for the Promised Land, The Offering of Isaac, and Abraham Receiving the Blessing of Melchizedek*. The whole has been executed under the superintendence of, and from the design of, Mr. T. W. Camm.



## GLASGOW INSTITUTE OF ARCHITECTS.

THE annual dinner of the Glasgow Institute was held on February 27 at the St. Enoch's Hotel. Mr. James Sellars presided, with Mr. David Thomson as croupier. Among the members present were:—Messrs. H. K. Bromhead, Wm. McLean, C. Douglas, J. J. Burnet, Wm. Landless, John Thomson, Airdrie, J. Gordon, J. L. Watson, John McLeod, McGibbon, Skirving, R. Turnbull, and M. Stark. The Chairman, in proposing "The Glasgow Institute of Architects," said:—The Institute was incorporated in September 1868, and it is now in the seventeenth year of its existence, a year which in the human life is one of the most interesting. As an Institute, however, we are much more mature than the youth of the same age. Our infant steps were carefully guided, our school days were watched over by wise advisers. The names of such men as the late Alexander Thomson and James Salmon, George Bell, John Baird, and John Burnet will long be remembered as the fathers of the Institute; and, thanks to the efforts of these men and those who came after them, we have long ago entered on a useful career, doing good earnest work in the past, taking part in all matters of public interest connected with our profession, and justifying our claim to a position of influence among similar societies in Glasgow. It has been said that as a profession we are not recognised by the general public in the same way as the learned professions are. It is not that the architect should be or is necessarily less learned than other professional men, but that anybody may assume the name of architect without any special training or education whatever. The doors are too wide; the way into the ranks of the profession is too easy. No university degree is required, and no examination as to fitness is necessary before beginning practice; therefore many persons do begin practice, do assume the name, who are no more fitted to do so by their training or education than they are to be ministers of religion, doctors, or lawyers. These are the quacks of the profession, and they bring discredit on the name of architect. I hope I shall not be understood to mean that there have not been and that there are not men—some of them very distinguished men—who have done some of the best work in the country who were not specially trained for the profession; but these men were born architects, and I think it is safe to say that their work would have been still finer if they had had the educational advantages which, I hope, will be at no distant date available in Glasgow for all who aspire to be architects. A chair of architecture at the university is required, and an examination before beginning practice, in order to secure the status and the proper recognition of architecture as one of the learned professions. Such an examination would not prevent the kind of persons I have been referring to from calling themselves architects; but there would be a standard of efficiency provided, and the public would no more think of employing the unqualified architectural practitioner than they would of employing a legal pettifogger or a medical quack. Something has been done in the direction I am indicating by the Royal Institute of British Architects and by this Institute during the past year. Then I may here refer to the "Alexander Thomson Travelling Studentship," the funds for which will be available in about two years, and which will be under the management of this Institute. Something is also being done for the architectural education of the young men in our profession, and that by the young men themselves. The Glasgow Architectural Association is doing excellent work in this way, and I mention it here in order that I may express the hope that the Institute will see it to be its duty to assist them in their efforts. The means of getting a proper architectural education are no doubt available for those who can afford to avail themselves of them in London and on the Continent, but we want the same facilities nearer home; and, above all, we want the public to have the means of knowing who have got it and who have not. It may be said that the public can judge by their work, but this is true only in a limited sense. Architecture is, unfortunately, one of the things which most people think they know all about, just as a large proportion of the public think they can steer a boat or drive a horse. And not only does the unqualified practitioner find employment, but occasionally the services of any kind of architect are dispensed with altogether. There are acres of land in Glasgow covered with dwelling-houses and rows of terraces in the west end which knew not any architect; but when their insanitary or unsubstantial condition is discovered the profession as a whole suffers, it being assumed that there must have been an architect employed. The importance of the work of the architect ought to place him in the front rank among professional men. The warehouses or the offices or the workshops in which we do our business transactions, and the houses in which we live, are or ought to be the work of his hands, and on his skill or the reverse the comfort and the health of the community largely depends; and it is, therefore, of the first importance that only men who are known to be properly qualified should be allowed to practice in the profession. There is probably no other professional man who has the responsibilities of an architect,

or who is so much at the mercy of other people in the carrying out of his work—that is, the erection of his buildings. It may be said of him as it is of the good man, that his works follow him—good or bad they are a standing credit or the reverse; his mistakes if he makes them—or if they are made in his name it is the same thing—they will not hide; and his reputation may be ruined in a single day by a thoughtless builder or a careless inspector. The mistakes made by our legal friends, if they ever make any, or if their clerks make them, may be serious enough in their consequences, but they are probably not known outside a narrow circle; while the mistakes made by our medical friends, if they ever make any, are probably never known at all, and the more serious they are the less likely they are to be known. The work done by our Institute is not selfish. It is true that we are, in the first place, a society or incorporation instituted for the protection of our professional interests; but our interests are, as we believe, the public interests, and we have always shown our readiness to take part in all movements having for their aim the public good. Much good work has been done during the past year by the Institute, such as helping to revise the rules and regulations for the measurement of mason work; and it is hoped that the rules and regulations for the measurement of all other departments of building works will be subjected to the same revision, and thus put the system of payment for artificers' work on a more equitable and fairer basis than, in the opinion of some of us at least, it can be said to be at present. The present year has, like its immediate predecessors, been anything but a prosperous one for the building trade, and, therefore, for our profession; but I think there are signs of better times in the immediate future. While there has been no general activity in the building trade, there is one very important structure in progress—the new municipal offices—a building which, I have no doubt, will fully maintain the character of Glasgow for fine Classic architecture, and be in all respects worthy of the wealth and importance of this great city. On the whole, I think we may as an Institute congratulate ourselves in being in a healthy and vigorous condition. We include in our membership a large majority of the profession in Glasgow, but there are still a few outside our doors who should be inside; and I trust we shall gain in strength by getting these architects within our fold before another year. A society of this kind is a common ground of union in which we can meet on friendly terms; a means of promoting good feeling; a place to get rid of prejudice—to get unpleasant angles rubbed off; and it is a standard and referee on all questions of professional practice and etiquette; and a protection of professional honour.

The other toasts were—"The Lord Provost, Magistrates, and Town Council," by Mr. Bromhead—Mr. Carrick and Dr. Russell replying; "The University," by the croupier—reply, Professor Veitch; "The Merchants' House," by Mr. James Thomson—reply, the Lord Dean of Guild; "The Trades' House," by Mr. William McLean—reply, the Deacon Convener; "Kindred Professions," "Kindred Societies," and the "Guests."

## SOME NOTES ON CORNISH CHURCHES.

THE churches of Cornwall are usually described as "mean" edifices. The passing visitor thinks that because their roofs are low and their exteriors void of sensational effects, and their types and features little varied throughout the country, therefore the Cornish churches are deficient in architectural interest. But this is far from the case, as anyone who knows them well can testify. Although the local type is everywhere maintained, the repetition is no bar to architectural interest; it only emphasises and strengthens the peculiarities, gives the type opportunity to ripen, and still allows individuality to each respective church.

There are many points of similarity between the churches of Devon and Cornwall; and as Devonshire churches partake of many of the characteristics of Somersetshire churches, we may say that the work of the three counties is allied. If they had to be classified in order of merit they would have to stand thus—Cornwall good, Devon better, Somerset best. Devon echoes Somerset, and Cornwall echoes Devon. Cradle roofs abound in all three counties. In Cornwall there is no other type of roof. In Devonshire the generality of the roofs are of that type. In Somerset there are a great number of that type, and a great variety of other types also. So there is here often the same peculiar continuation of the nave aisles, to the full extent of the chancel; and the aisles have pitched roofs of the same description as the nave, but somewhat smaller.

This treatment accounts for the absence of clerestory windows in Cornish churches. Indeed, I know only of four instances of clerestories in the county—at Callington, at Lostwithiel, at Fowey, and at North Petherwin. Again, in Devon

\* A paper by Mr. John D. Sedding, published in the *Church in the West*.



and Cornwall there is an absence of any structural distinction at the chancel. I know of only one fifteenth-century church with a chancel arch—at Bodmin; but there are evidences of a chancel arch at North Hill, removed for safety's sake. Tavistock Church, though in the county of Devon, is, so far as type is concerned, practically a Cornish church, and this has also a chancel arch, but in all cases the responds to the arches die up near the roofs; the arches themselves are scarcely visible, as they almost merge in the roofs. I have said that the architecture of the three western counties is of the same genus, but it would be wrong to suppose that the work of each county had not its own peculiarities and distinctive characteristics. Anyone familiar with them soon finds these differences, and is able to mark how strongly local types and local tricks of method prevail.

Cornwall is a remote place, and remoteness in the Middle Ages implied inaccessibility. It was not only remote, it was little known and visited, and it is strange to note how few large Mediæval houses of any pretensions exist in the county. One may remark, however, that if there is no quantity of Mediæval domestic use, there is quality in that exquisite old house—Cothele—a very model and type of a quaint and charming English house.

This remoteness and isolation were, of course, favourable to the growth of individuality of character. The church builders had no one to please but themselves, and as neither the coach nor the railway was running then, there was little chance of interference with traditional types. The earlier periods of Mediæval architecture are but sparsely illustrated. The remains of Norman work are not numerous. There are two bays of a Norman arcade at Lelant; there are also portions of Norman arcades at St. Germans, North Petherwin, and St. Breward; and other Norman remains at Manaccan, St. Cleer, Tintagel, Mylor, and Landewednack.

Early English work is rare. St. Anthony's, near Falmouth, is said to be the best example. I have met with several cases, such as St. Levan, Newlyn East, and St. Wendron, where one or more of the transepts of a thirteenth-century church have been left standing, while the rest of the structure was destroyed by builders of a later date.

The Decorated work which remains is of a high character, as at South Hill, Shevocke, St. Ive, near Liskeard, North Hill, St. Thomas's Chapel at Bodmin, St. Columb, St. Austell, and Lostwithiel. The stone employed in work of early date is Polyphant or Catacleuse stone. The prevailing type of the architecture of Cornwall is of various stages of the fifteenth century. One of the most interesting phases of Cornish work is that which was done in the early part of the sixteenth century. This period is represented at the church of St. Mary Magdalene, Launceston, and at St. Mary's, Truro, which are remarkable for their elaborate external panelling—that at the former is done in granite, and that at the latter in Pentewan stone. The tower at Probus, which is, without exception, the finest in Cornwall, is also of this date (1520). Its rival for eminence is Fowey—100 feet high. Probus is 125 feet high, and infinitely more elaborate, and it is interesting to note how closely it resembles a Somersetshire type. In the churches of Perpendicular date granite is, almost without exception, employed for window tracery; and in the latter work, where dignity of effect was considered, and funds and stone were plentiful, the structures were faced with wrought stone entirely, as at Probus Tower, North Hill (south aisle), and the Launceston and Truro churches, which are covered over with sculptured devices. To the sixteenth century is also to be ascribed the noble series of stained glass windows at St. Neot's, which dates from 1528. To the sixteenth century is due also the fine woodwork in the county, as the seats at Altarnun, St. Levan, Morwenstow, and in the Buryan, Sancreed, and other screens. The peculiarity of Cornish woodwork is the profuseness of its surface ornament, the whole ground of the panels being carved all over. There is nothing like it out of the county—anywhere to my knowledge, except the superb screen at Swimbridge, North Devon. Ordinarily, the panels of even the most ornate screens in other counties will have traceried heads, but plain panels. Here the panels are all covered with sculptured devices—sometimes of foliage alone, of great varieties of type, growing mostly out of quaint little pots; or foliage mixed with birds, or beasts, griffins, and all manner of queer imaginative creatures and religious emblems, and here and there figures of men or angels, and not only respectable men and men of high degree and the patrons of the church, but in some cases the village clown, the squire's tame bear, and the "passon's" pig. And many is the caricature of Tom, Dick, or Harry, and many the piece of friendly fun or playful spite that appear in these carvings, which testify to the deft handiwork and keen humour and quaint imaginations of the Cornish craftsman of bygone days. The history of the grotesque in British art ought certainly to be written. I have often tried to analyse for myself the sources of the peculiar delight one gets from an old Cornish church; but as often as I have tried I have given it up. One cannot put that sort of thing into words.

There is, as I have said, very little to admire in the rough exterior of the churches of the county—in their unvaried outlines, or their unpretending features and repeated types; and the unsympathetic stranger, coming upon them with his mind stored with finer memories, would think them mean and rude and deficient in interest. Somehow, they seem more identified with the local surroundings than is the case with the church architecture in other parts of England—possibly because the surroundings are themselves usually of so striking and absorbent a character, and because their builders actually, in many cases, merged the churches into the hill-sides by building them "into the country," as country folk say. But these simple structures seem somehow to be part of the simple nature of the moor and down which surround them; they have what painters call "quality" or tone in them; they are essentially human, and eloquent of the character and every-day life of the men who reared them; and they are full of the silent poetry of art that was human while it was religious, and that dedicated its best to the service of the great God in an unpretending, unaffected way.



#### South Kensington.

SIR,—The varied opinions expressed in your "Tesserae" are not only interesting and valuable in themselves as coming from men of mark, but convey collectively the truth of the difficulty under which they labour. The few remarks of the most terse of all thinkers, Professor Huxley, and the undoubted truths conveyed by those of Walter Smith, nearly cover the whole ground.

Curio hunters, archaeologists, "would-be" bookworms and clerks in legions—the latter in overwhelming proportion—swamp and oust the practical workers under the Science and Art Department. Speaking from over forty years' experience as an art expert, for thirty of which I have held a post in a Government Department, I see nothing to encourage any hope of anything better till this order of things is reversed.

When I state that I myself have drawn and superintended the engravings of nearly all the books referred to by Sir Cunliffe Owen, that it was all done *in spite* of the opposition of the clerkly "powers that be," that I have never spent an hour in any art school, is to record only one of many facts or proofs I could adduce.

Let the cobbler stick to his last, and if he wants culture, scientific or historical, let him read. Give him books; let him keep abreast with the theoretic. We are now threatened with blacking without having boots. Polish is necessary, no doubt; so are boots. One man to make boots, and ten shoeblacks, confuse and upset the proper balance.

I must differ on one point with Walter Smith as to the utter paucity of men worth mentioning. The late R. N. Wornum, the first Art Librarian at South Kensington, was a serious loss by his removal to the National Gallery. He possessed all the proper elements as teacher of ornamental and industrial art.

I will give one more fact, which is no secret. The National Art Library at South Kensington consists of about sixty thousand volumes. Of this number, roughly speaking, about ten thousand are books of topography, and the same number of volumes represent subjects nearly foreign to anything useful to any description of art teaching.

Yours obediently,

South Kensington:

March 5, 1885.

ANDREW REID.

#### Broseley Tiles.

SIR,—We notice in a recent issue the report of the meeting of the Royal Institute of British Architects, and that papers were read on roof-coverings. We are fully convinced that a discussion of this nature will confer a great benefit on all interested in building. We see that mention is made of the great snowstorm of 1881, and its effects upon the tile-roofs. But of those found to be faulty, the majority would we think be covered with the old-fashioned hand-made tiles; but since that time great improvements have been introduced in their manufacture. They are now made by machinery, by which the camber of each tile is equal, and the joints consequently can be laid closer, so that snow-dust penetration is reduced to a minimum, and when the thaw comes the small quantity that is in the joint follows the underside of the tile until it comes to the bottom end, where it drops into the top of the one below, and so is led right out again to the surface of the roof.

The heavy pressure put on each tile in making consolidates it so much that it becomes far more durable, less absorbent, and a more perfect non-conductor of heat, so that houses so



covered are warmer in winter and cooler in summer than are houses covered in any other manner.

Care should be taken that the tiles are put close up to each other, or the consequence is that they overrun each other, and in a very short distance along the course the overrun is sufficient to cause a straight joint, which, of course, can never be weatherproof. As every one knows, there is a slight difference in the shrinkage in burning, and the tiles will sometimes vary a little in width, causing an overrun; but the introduction of a special-made narrower tile at intervals will at once restore the truth of joint.

In this neighbourhood many roofs are covered with seconds or even thirds tile, not good enough for the market, but, being laid quite dry, without any rendering, pointing, or torching, but with great care as to breaking joint, the roofs are weatherproof, and a hurricane will scarcely move a tile if the wind cannot get inside the roof to lift it from beneath, the thickness of the tile at the edge not being sufficient to allow power for displacement. The nibs on the pressed tiles have so good a grip on the lath that nails or pegs are scarcely needed, in fact if pegs are carelessly used they are often a cause of "roof stripping," for if not driven home the peg will cause the next tile to tilt and so the wind gathers under it and lifts it off, breaking easily the tile or the peg.

Most of the tiles made in this neighbourhood are made with holes and nibs, so that the user can nail or not as he may think best.

Mr. Nevill speaks of a smooth face of cement underneath the tiling; this we think worth consideration, but great care should be taken to have the smoothness he speaks of, for if it is uneven tilting will certainly be the result. Mr. Coldwell speaks of the excessive damage sustained by tile roofs in Essex after the earthquake; this most probably arose from using short, 3 feet laths, which were not so strong or so able to bear the shock as the continuous lath now used for tiling. We cannot see why tile roofs should give way more than any other class of roofing. Tiles have been made in this neighbourhood for many centuries, some specimens having been found at Uriconium, which was built by the Romans A.D. 40, and we think there is no doubt the manufacture has been carried on more or less ever since, and during the last hundred years has largely increased. This, we think, is sufficient evidence to prove that tiles are the most durable and amongst the best of all roof coverings.—Yours, &c.,

Broseley.

BURTON & SONS.

### GENERAL.

**Mr. J. E. Boehm, R.A.**, has received a commission from the Queen for a bust of General Gordon, which is to be placed in the corridor at Windsor Castle.

**The Piccadilly Galleries**, with the exhibition of the Institute of Painters in Oil-Colours, were opened on Sunday last, and the number of visitors was 1,622.

**A large Venetian Mosaic** is now on view at the Glasgow Institute of Fine Arts. It was part of the cargo of the *Austria*, a vessel which was wrecked on Ailsa Craig in October. Afterwards the case drifted to Girvan. There is no clue to the owners.

**Two Groups of Statuary** have been commissioned from Count Gleichen for erection at the Holloway College, Esher.

**Mr. P. W. Adam, A.R.S.A.**, painted the view of Florence which formed part of the scenery in the new play, "The Bachelor of Florence," lately performed by amateurs in Edinburgh in aid of the University Union Building Fund.

**M. Léon** has been awarded the first prize in the competition for the decoration of the Salle des Mariages, in the Mairie of Courbevoie. The second prize has been obtained by M. Chartran, and the third by MM. Delahaye and Picard.

**Mr. Millais, R.A.**, is to paint the portrait of H.R.H. the Princess of Wales, which is to be hung in the Corporation Art Gallery in Manchester.

**Mr. A. Bruce Joy** has completed the monument to the late Sir William Siemens, F.R.S., and it has been placed in Kensal Green Cemetery. It consists of a red Aberdeen granite cross, in which is inserted a medallion portrait in Greek marble.

**A Cast-iron Panel**, designed and modelled by Mr. Chas. H. Jessop, student of the Derby School of Art, has been purchased by the South Kensington authorities as an addition to the national collection of art objects in the museum.

**Mr. C. Purdon Clarke, C.I.E.**, Keeper of the India Section of the South Kensington Museum, has left for Bombay in order to make arrangements for the illustration on a large scale of the handicrafts of India by the selection of native artisans, who will be brought to England, and work at their several trades in the exhibition of 1885.

**Mr. Christian** has prepared designs for a new church, which is to be erected at Longridge, near Preston.

**A Kyrie Society** has been established in Dublin. The first work undertaken has been the decoration of a ward in Stevens's Hospital.

**The Society of Antiquaries** have made a grant of money towards the cost of excavating one of the lake dwellings at Ulrome, near Bridlington. Since 1880 the expenses of the work have been defrayed by Mr. Boynton, of Ulrome Grange.

**The Marquis of Bute** has agreed to lend his collection of pictures to the Queen Park Museum, Manchester, for exhibition. The South Kensington vans are to be employed for removing the paintings.

**Mr. Arthur Cates** has presided at the examination in architecture for candidates for the Associateship held in Manchester during five days in last week.

**An Exhibition Gallery** has been added to the auction rooms of Messrs. Christie, Manson & Woods. It was constructed from the plans of Mr. E. A. Grening.

**An Electric Tramway** is in course of construction at Blackpool.

**Mr. John Morris, Bolton**, has prepared plans for the basement of the new Clarendon Street Board School, to be erected on the site of the old Bolton Moor Reservoir.

**The Duke of Westminster** on Saturday last laid the corner-stone of the Westminster Hospital Medical School in Caxton Street, which is in course of erection from designs by Mr. Stephen Salter.

**Messrs. Carter & Son**, of Winchester, are about to erect a row of shops at Northgate, from the designs of Mr. T. Stopher, architect. It is anticipated that some valuable Roman remains will be found on the site.

**The Tower of Rochdale Town Hall** is to be rebuilt according to designs by Mr. Waterhouse, A.R.A. The work is expected to cost about 16,000*l*.

**The Old Infirmary Buildings** in Edinburgh are about to be removed to make room for School Board buildings. Messrs. Morris & Son are the contractors.

**Mr. W. Williams**, whose design has been accepted for the English church at Cyprus, is a native of Winchester. At present he is engaged in the Government service on the island.

**M. Lauth**, the superintendent of the Sèvres Factory, has completed his new process for the decoration of half-baked porcelain. It was at first proposed to restrict the advantages of the method to French industry.

**A Bill** has been prepared and brought in by Mr. Shaw-Lefevre and Mr. Hibbert giving the Postmaster-General power to acquire lands in London, Birmingham, Bristol, and Newcastle-upon-Tyne, for the purpose of providing adequate accommodation for the public service in those places.

**Messrs. Sinclair & Son**, of Edinburgh, have obtained the contract for the construction of the west wing of the Museum of Science and Art. The Government vote is 20,000*l*. It is stipulated that the work must be completed within two years and a half.

**The Tay Bridge Works** have been visited by Major Marindin, for the purpose of ascertaining the result of the test pressure of the new piers. The results are satisfactory, and the works generally are now appearing to make greater progress.

**Canterbury Cathedral** is to be lighted by means of an electric system before next winter.

**Prince Murat** is erecting a chapel near the Champ de Mars, Paris, which is to be a memorial of the late Prince Imperial. The cost will amount to about 12,500*l*.

**A Bill** has been introduced in the House of Commons for the better preservation of the river Thames above Teddington Lock for purposes of public recreation, and for regulating the pleasure traffic thereon.

**Mr. C. A. Edge**, architect, has recovered 100*l*. damages from the Norwich Fire and Life Assurance Company, for improper interference with the terms of a lease of offices held by him at Bennett's Hill, Birmingham.

**"Round Hill,"** at the rear of All Saints Church, Aldershot, is likely to be selected as the site for the statue of the Duke of Wellington, which was removed from Piccadilly. It now lies at the Ordnance Store.

**Mr. L. Colenutt** has prepared designs for a pavilion which it is proposed to erect at Shanklin.

**A New Infirmary** is to be erected in connection with the Newcastle-under-Lyme Workhouse, and the plans have been approved by the Local Government Board.

**The Montrose Museum** is to be enlarged if funds can be obtained. The subscriptions at present have only reached 550*l*.

**Messrs. Caird & Co.**, of Glasgow, have resigned the contract for plasterers' work at the Belfast Free Library, which was the cause of so much discussion in the town.

**The Lord Mayor** will open the new buildings at the St. Pancras Workhouse, designed by Mr. Bridgman, on Friday next, the 13th inst.



# The Architect.

## THE WEEK.

CHRIST'S HOSPITAL has long been doomed, and projectors of railways and City improvements have during the last twenty years devised many plans for utilising the valuable piece of ground in Newgate Street which is occupied by the buildings. The scheme of the Charity Commissioners, which was made public on Saturday, indicates that the last days of the old school are not far off. It will be succeeded by several boarding and day schools for boys and girls. The Hospital Schools are to consist of a boarding school for 700 boys, one for 500 girls, and a preparatory school for 120 boys, which are to be within a convenient distance of the City. The day schools are to comprise a science school for 600 boys in the City, and a school for 400 girls somewhere within three miles of the Royal Exchange. The existing buildings may be used for the boys' school until other suitable buildings are provided, but no longer. It is recommended that in the construction and arrangement of the buildings for the Hospital Schools provision shall be made for the subdivision and grouping of the scholars with a view to convenience and efficiency of supervision. The buildings for the science school are to include a chemical laboratory and workshops fitted with appliances for working in wood and metal. The best way to appropriate the ground has yet to be determined. The removal of the school would be a favourable opportunity to reconsider the late Mr. PEARSON'S plan for a central railway terminus. It would be difficult to find a better site.

THE official residence for the First Lord of the Treasury, in Downing Street, is not sufficiently imposing, and it is not improbable that Dover House, in Whitehall, will be purchased as a substitute. There is something anomalous in allowing the Government property to be divided by a private house, for at present the Treasury Buildings are separated from the Horse Guards, Admiralty, and the premises acquired for the new offices by that building. Dover House is not without political associations, for it was a residence of Lord MELBOURNE. In case alterations are made, we hope that the screen which was added by JAMES HOLLAND will never be touched. It is a gem of architecture, which becomes the more valuable from the contrast between the Ionic columns and those on the opposite side of the street in the Banqueting House.

AFTER a long and most honourable career in this country, Mr. LOUIS HAGHE died on Monday last, in his seventy-ninth year. When he came here from Tournay the influence of SCOTT'S works was still in the ascendant; there was a sort of sentimental affection for Mediæval work, and the views of old Belgian town halls which HAGHE drew on stone met the public taste. Better work of its class was never produced, and Mr. HAGHE'S splendid plates did much towards the improvement of lithography. Yet, in spite of his fitness, he was never employed on any of the editions of SCOTT. HAGHE soon perceived that England differed from France and Belgium in the value that was set on lithography; however ably a man might use crayons, he was not recognised as an artist. It is an absurd prejudice, and has an ill effect on art in general. LOUIS HAGHE accordingly gave up lithography, and kept to water-colour painting. Although his best work would in other men's hands be considered simply as a background, yet, by his surprising dexterity in rendering details, he compelled the public to admire his drawings. Like all men who have had practice in illustrative work, he was skilful in introducing figures, and their dramatic fitness had much to do with the success of his water-colours. That HAGHE was scenic could not be denied, but the arrangement always displayed admirable management. The esteem in which his brethren of the new Water-Colour Society held him was shown by his election to the vice-presidency, and subsequently to the presidency. When, through ill-health, he was compelled to resign the latter office, the office of honorary president was created for his sake.

By the death of Mr. R. M. PHIPSON, F.R.I.B.A., and the resignation of Mr. BRERETON, the offices of County Surveyor and County Road Surveyor for Norfolk have been rendered vacant. The magistrates resolved to amalgamate the offices, in the expectation of saving 300*l.* a year. On Saturday last there was an election for the new post, and there were no less than one hundred and twenty candidates. A majority of votes was obtained by Mr. W. T. B. HESLOP.

Mr. J. A. CROWE, commercial attaché in Paris, has been appointed to the rank of Companionship of the Bath. Mr. CROWE'S name will be familiar to our readers as one of the authors of the books on Italian painting and painters, which have made "Crowe and Cavalcaselle" almost as well known as "Vasari." Their researches may be said to have revolutionised art history.

At a meeting held at the Liverpool Art Club on Monday, March 9, to discuss the question of the site for the proposed cathedral, speeches were made by Mr. HAROLD RATHBONE, Mr. BARE, Mr. GRAYSON, Mr. BOULT, Mr. SUMNER, Mr. FORD, Principal RENDALL, and others. The opinion of the professional architects was strongly opposed to the St. John's site; its want of size, awkward levels, and the overwhelming proximity of St. George's Hall, were declared to be quite incompatible with architectural effect. The subject is to be further discussed at an adjourned meeting to be held on Monday, March 23.

ON Wednesday evening Mr. MUNDELLA distributed the prizes to the students of the National Art School at South Kensington. Afterwards there was a soirée given by the students, at which probably three thousand people attended, and the amateur concert was successful. According to the report which was read, the prizes gained last year were three gold, twenty silver, and twenty-three bronze medals. There were also eighty-two national competition books, ninety-seven third-grade prizes, and seventy-two prizes of lower value. Travelling scholarships of 50*l.* each were awarded to Messrs. JOSEPH A. PEARCE, ELLIS W. ROBERTS, and GEORGE WARD. Six students in training and one national scholar have been appointed to masterships in schools of art. The total amount of fees received has been 2,802*l.* 12*s.* 6*d.*, made up of 2,539*l.* 8*s.* 6*d.* from day students and 263*l.* 4*s.* from evening students.

Mr. M. E. HADFIELD, who died on Monday in Sheffield, was one of the original members of the Institute, and during half a century of practice he upheld the dignity of the profession. The attacks which have been made on architects counted for little in the town where he lived and was respected. Mr. HADFIELD from his position in connection with the Norfolk estates would be entitled to consideration in Sheffield, but, apart from his office, his character was enough to insure general esteem. He was a man that was without self-seeking, and it might be said of him that his assumption of public offices required no small amount of self-sacrifice on his part. He loved retirement, but people who had grievances and troubles knew where to find him, and much of his time must have been sacrificed in giving advice, of which no account could be taken in a ledger. We shall not anticipate the description of Mr. HADFIELD'S works, which will be read at the Institute on Monday. Some of them are mentioned in another column, and are among those which must be taken as typical examples of the Gothic revival.

THE report of the Artisans, Labourers, and General Dwellings Company, which was read at the general meeting on Wednesday, announces that the directors have under their consideration the question of acquiring a central site in the metropolis for the purpose of erecting block buildings as dwellings for the industrial classes. They consider that such an extension of the Company's operations would assist in meeting the requirements of the large class of artisans who are obliged to live near their work. The exceptionally fine weather of 1884 enabled the building operations in Noel Park to be pushed on with great rapidity, so that at the close of the year 743 houses, including those built or commenced in the previous year, were completed, 465 being let and occupied.



## THE ASSOCIATION SKETCH-BOOK.

THE publication of a volume of the Sketch-book of the Architectural Association is always an event, for, apart from the interest of the subjects, it is a sort of gauge of the latest style of draughtsmanship, and an indication of the men who have most recently made their power felt among the members. This year's volume has an additional advantage, as the ink-photo process of Messrs. SPRAGUE, which was introduced in *The Architect*, gives an opportunity for the reproduction of water-colour and pencil drawings, and there is in consequence not only greater variety in the volume, but far more breadth than is possible with photolithography.

What must first strike the observer as he turns over the sketches, is that there are as many styles as artists. We can find no trace of imitation, and so much independence is a token of the life that is in the Association. It would be vain to deny that from time to time one kind of drawing secures the largest amount of praise, but somehow its admirers are chary of adopting it as a model.

The seventy plates in the volume are taken from England and Wales, France, Germany, Switzerland, Italy, Spain, and Syria. From Scotland and Ireland not one sketch has been derived. Possibly neither country would be satisfied with less than a monopoly of the plates; but, at any rate, the omission is remarkable. The collection commences with a view of the servants' court, Apethorpe Hall, in North Hants, a long, low range of buildings. Like the view of the Stamford and Kingscliff almshouses, which are also by Mr. T. GARRATT, there is no attempt at elaboration or shadows, and for the class of work the style answers well. The sketches of Barkisland Hall and New Hall at Elland and Hartshead Hall, by Mr. W. RILEY, are nearly similar in treatment, but there is less decision, which may have arisen from the use of transfer paper. Mr. G. G. WALLACE's set of geometrical drawings from Beverley Minster are examples of conscientious work, in which every line appears capable of a microscopic test. The sculpture is in consequence a little weak. But in our copy the plates are not well printed, and pale ink does not impart vigour to lines. Mr. WALLACE's colour sketches of Haddon Hall are also carefully finished. Mr. MASEY's measured drawings of Boxgrove Priory show less hesitation, but there is very little ornament to be drawn. The view of Crowland Abbey, by Mr. MILLARD, comes out most effectively. The ink-photo process reveals whether colour has been laid on with decision or not, and generally in this case the result is creditable. The orders in the arching appear rather crude from the effort to express them with the brush as if a pen were used. In the sketch from the Lady Chapel at Ely, the details have been lightly sketched in with a pen, the colour was used in large washes, and the effect is much better. The old house in Carden on Moselle, and the bit from the castle at Landshut, which are entirely brush-work, are, however, the most effective of Mr. MILLARD's plates, and suggest the kind of work for which the process is adapted.

Mr. GOTCH gives a careful drawing of beer-cellars in Drayton House (A.D. 1584), with the crests which are carved on the bosses of the vaulting. It is an interesting example of work, and has the advantage of not being too large to be shown in full on one page. Another type of completeness is the tomb of the mother of Lady JANE GREY (A.D. 1559), from Westminster Abbey, which is apparently an English work, and is an admirable specimen.

Mr. SANKEY's fine view of the Lady Chapel at Ely is apparently outlined in pencil, the shadows being put in by a brush. The subject is difficult, but the view is masterly. The lines of groining and windows are so true it is difficult to believe that they are entirely freehand. The two drawings by Mr. LETHABY are very beautiful, and suggest that they were completed on the spot. The originals seem to have been in pencil. One shows some of the old houses which still survive in Exeter, with quaint bay windows on every storey, while the second gives us dormers and chimney as seen from the roof of the Château at Blois. While boldly drawn, both have a peculiar grace which entitles them to be taken as models. Mr. WILLINS has selected a brass from Felbrigge Church for subject. A drawing of the tower of St. Michael's Church, Gloucester, is by

Mr. WOODWARD, but from its size there might have been more attention given to the details. Mr. NORTON's sketches of English halls are on a small scale, and somewhat old-fashioned in style, but the main lines show a sense of proportion. Mr. A. B. PITE has a characteristic sketch of a curious font, in which figures are rendered with a due recognition of their humour. His second sketch is of pinnacles from Westminster. It might at first sight be taken for a view of an entire structure, and suggests that the builders may have had such an intention. The drawing looks as if it had been made with a quill on transfer paper, and much is gained by using horizontal lines for shadows. In Mr. VACHER's drawing of Howden Church the principal lines appear to have been ruled, the remainder being freehand, and the combination, if open to objections, has at least the advantage that a building which is represented does not look as if it were a ruin. Mr. DAWBAR has a good sketch, although too large for the subject. The views in Rochester and Youghreave Church are more successful. Mr. E. E. DEANE (who is now in Boston, U.S.) represents one of the fine stalls in the parish church at Lancaster. Mr. BIDLAK's two pencil sketches from Leicester have in style a resemblance to Mr. SANKEY's, and the pen drawing of St. Margaret's church tower is one of the best of its class in the volume. Mr. PRYCE is bold enough in his "Maesmawr," but the trees would afford Mr. RUSKIN an opportunity for a sermon on modern indifference to natural forms. The house at Mayfield, by the late Mr. W. J. LANDER, is more suggestive of a tracing than of an outdoor sketch. The four drawings of Minehead Church, by Mr. NEVINSON, are a little heavy, but a country builder would be likely to prefer them to others which are more artistic. Mr. KEMP deserves a word of recognition for his careful drawings from Southwell Minster, and Mr. WOODWARD for the Westminster stalls. There is some uncertainty about what Mr. PHILLIPS means in parts of his sketch from Worcester Cathedral, and it looks as if it had been finished from memory.

The first among the sketches from France are Mr. BAGGALLAY's from Beaugency, showing two picturesque groups. Next comes an able drawing of the palace at Beauvais, from a water-colour by Mr. R. P. SPIERS, by whom there are also a château at Charente and a south-east view of Laon Cathedral. In all of them the parts stand out with much force. We prefer Mr. CARTER's street at Cordes to his courtyard at Vézelay, as in the latter there are far too many random strokes. Among the plates which represent Germany we may mention the Holstein Thor at Lubeck, by Mr. DAWBAR, and the curious leather box from Ratisbon, by Mr. W. A. PITE. The Engadine in Switzerland supplies materials to Mr. LOHR for a plate of wrought metal-work.

The Italian sketches begin with a pen-and-ink drawing of St. Francesco at Assisi, but with buildings of the kind in which there are large expanses of plain surface water-colour drawings are more suitable. Mr. INCE gives some facile bits from Ferrara. Mr. BAGGALLAY, in his sketches from Florence and Prato, does not trust to freehand entirely, and in this way the sharpness of arrisses, which is common in Italy, is suggested. Mr. BALL's view of St. Caterina, Pisa, suffers from neglecting to use ruled lines. The drawing of the Frari, in Venice (a subject which so many artists have attempted), by Mr. LEACH, is rather vague in the windows, owing to some of the lines having failed to appear when transferred to stone. Mr. R. P. CONDER's sketch of a part of St. Mark's is suggestive of detail rather than of general effect. The fine drawings of the ornament on the pilasters from St. Anastasia, Verona, by Mr. HOOPER, deserve especial mention. Lastly come Mr. BURMESTER's two sketches of Spanish towers and the Byzantine capitals in Jerusalem, drawn by Mr. GARRATT, from sketches by Mr. PHENÉ SPIERS.

It has been often affirmed of late that Gothic work is about to be superseded, and that some form of Classic is to be henceforth the fashion. But no one would come to that conclusion from looking over the sketches. They may be described as Gothic in one or another form from beginning to end. The nearest approach to Classicism in the volume is the sketch from the courtyard of the Bourghéroutle Hotel, in Rouen (unless we count the Westminster tomb), and an admirer of PALLADIO would not see much to claim in that façade, although



the ornament is not unworthy of RAPHAEL'S scholars. It will be said that whatever may be the qualities of the buildings which we identify with Greece and Rome, picturesqueness is not among them, while it is the one of all others that is sought in a sketching tour, when time is limited and the space to be covered is extensive. However true that may be, it does not explain entirely the preference for one class of work. Considering that the Sketch-book is a work of reference, and a guide to others, it is impossible to resist the belief that its character has not been fixed by chance, and that editors, committee, and contributors are confident that Gothic has still a future, and that the drawings can be turned to account as well as admired.

### CHARTERED WRONG.

BY LEWIS F. DAY.

THE general depression in trade has led to a good deal of speculation as to its causes, and of suggestions as to the way in which our manufacturers may regain the pre-eminence which it is said they are fast losing. It is thought, no doubt justly, that the artistic element has something to do with the sale of manufactured goods; and technical education is consequently being discussed, and the use of South Kensington questioned. But there is one hindrance at least in the way of the production of anything artistic in manufacture, namely, in the law of copyright—which seems to be expressly designed to legitimise what, but for it, would simply be stealing; and so makes it worth no man's while to encourage English design of a high class. Why should he, when he has only to wait till someone else has produced a good thing which he can appropriate? The obvious result of this must be that men cease to bring out any new thing artistic at all—a result surely not making for the promotion of British commerce.

I lay this to the discredit of the law, because it is tolerably certain that if it were a question of common law no twelve jurymen could possibly be found in whose opinion the appropriation of a design by one man which had been paid for by another, would be anything less than theft. The particular use made of such a design by the appropriator would, in the eyes of straightforward men, innocent of the quibbles in which the legal mind appears to delight, not in the least affect the question of his dishonesty in appropriating, any more than the use made of his ill gotten gains affects the criminality of the man who "lifts" your purse. If there were no statute on the subject, the verdict of a jury would be that what you had bought and paid for was your property, and that any one who filched it from you was subject to the penalty due to thieving; and it is certain that the opportunity, nay the encouragement, afforded by the law to those who have not the probity to pay for that which they can with impunity take, must in the long run chill the enterprise of honest men, and leave production in the hands of persons who do not care how soon an industry is wrecked, so long as they get something substantial out of the wreckage.

It is contended that the imitation in one material of a pattern designed for another, is in no way to the prejudice of the original manufacture. Even if that were so, it would be no argument in favour of design being made by law common property. The petty pilferer who lightens the cash-box is none the less a thief because the man he robs suffers nothing by his loss. If a copyright is worth anything, the owner has a right to it. If it is worth nothing to him, he would probably part with it for the asking—certainly for a consideration. Surely he ought to be allowed to determine whether it is of any use to him, and what it is worth. There might be here and there a dog in the manger who held perversely to what was of no use to him—we are all of us more or less selfish and self-willed—but there is not, that we know of, any law or statute made in the interests of compulsory magnanimity.

But *all* imitation is likely to be prejudicial to the original producer of a pattern. It is obvious to any one not entirely ignorant of the different manufacturing trades that the reproduction of a design in any kindred manufacture must be at the expense of the first producer. Nor is the harm confined to imitations which might haply take the

place of the thing imitated; as, for example, in the case of a wall-paper which is a copy of a silk, a floorcloth which is a copy of a mosaic, or a casting in iron which is a copy of marble or terra-cotta. There is probable harm in any reproduction whatever, no matter how far removed from one another may be the application of the two things. So thinking, the manufacturer who has bought his rights, as he imagines, and paid for them, and has further been at the expense of producing a design, perhaps by a very costly process of manufacture, feels himself aggrieved when he finds it immediately reproduced, maybe by some cheap and nasty process, without so much as "by your leave" on the part of the pirate. In his innocence he seeks the shelter of the law, and finds that it only drips cold water on him. He is informed by the learned judge that it is unlawful indeed to copy that which has been duly registered, but that a copy in another material is not a copy—that the pirate is consequently not a pirate, but a law-abiding and a law-protected appropriator of another man's copyright, and that there is no redress for him, poor man. Pondering over the mystery of this judicial juggling with words, he begins perhaps to doubt the wisdom of fair dealing, and determines not again to speculate in a property which he cannot legally hold.

It is said with some show of plausibility that if the copy is entirely removed from possible competition with the original, no injustice is done to any one by it. But even then it is not quite so. It is the way of the world to run after novelty; and every imitation whatsoever lessens the value of the original in that respect. There is a commercial value in the very rarity of a thing, as every collector well knows; and a manufacturer often pays an artist a good price on the assumption that by so doing he secures something out of the ordinary way. To vulgarise a design is by so much to lessen its value in the market.

The existing state of the law of copyright, or rather the law for defrauding a man of any property in the work of his own brains, has naturally been taken advantage of by those who study the law with a view of seeing how close they can sail to it without coming into collision with it; whose honesty is, in fact, strictly technical.

Thou shalt not steal; an empty feat  
When it's so lucrative to cheat

a man out of the profit which is due to his enterprise. There are certain manufacturers whom to name would, I suppose, be libellous, but who ply their dirty trade openly and unblushingly, laughing cynically at the idea of morality, and growing fat upon the spoils of their more simple-minded, not to say more honest competitors. And the said competitor stands at some disadvantage in the market when he has to compete in price with those who pay nothing for design. It is to be remembered that it is not here and there a design that a fair-dealing manufacturer pays for, but a great number—some of which are never produced at all, others of which prove to be a complete failure. It is only here and there one that is a great success, and to that he has a right to look to recoup him for his outlay in design; but it is just that taking design which is pounced upon, "vulgarised" and "played out" almost as soon as it is produced.

It is only this week, in passing down Newgate Street, I saw in a shop window a copy in linoleum of a well-known nursery wall-paper, designed by Mr. WALTER CRANE for Messrs. JEFFREY & Co. I was interested enough in the subject to inquire of Mr. CRANE and of Messrs. JEFFREY & Co. as to whether they knew anything of the copy, and I found that they had both seen it, but that they had not been consulted as to its piratical production, and believed themselves powerless to oppose it. Here is a case where there is distinct interference with the sale of the wall-paper. Any one who liked the design well enough to purchase it in the form of floor-cloth, would be deterred from papering the walls of his nursery with it by the very consideration that he had used it already on the floor. The artistically ill-advised application of the pattern to floor-decoration, to which it is not adapted, is only adding insult to injury—as is also the villanous rendering of the drawing, which, except that it is villanous, appears to be copied line for line (*i.e.* bad line for good line) from the wall-paper.



There is no reason just now to enter into the question of design, which may be more or less "cribbed." It would naturally devolve upon any one proceeding against another for infringement of his design to show that it was original, and that it had been infringed; but there ought to be no difficulty in putting a stop to deliberate copying. I believe, as I said, that it would be enough to wipe out existing statutes on the subject, and let a jury decide the question on the principles of common sense. But, if that is not feasible, what is to prevent the passing of a law enabling a man to register the copyright of his design *as a design*, and not as applied to some particular manufacture as now? I cannot but believe that English manufacturers would be glad of such a wholesome security as real copyright would give them. And I am certain that it would be to the honour of English manufacture and the benefit of English trade.

## THE ARCHITECTURAL MONOPOLY IN BIRMINGHAM.

A MEETING of the Birmingham School Board was held on the 6th inst., when the arrangements respecting plans of buildings were discussed. Mr. Kenrick, the chairman of the Sites and Buildings Committee, had moved that plans should be obtained for a school in Icknield Port Road to accommodate 1,000 children, and the proposal was said to involve the whole question of the monopoly of the architects.

Mr. Hawkes opposed the resolution on the important ground of whether they should not throw open the competition to the architects of the town. Thirty-three schools had been built, and all by one firm of architects, for a town in which many architects of the greatest eminence resided. Manchester employed more than one architect. Well, Manchester used to be quoted a good deal till Birmingham considered it was superior to Manchester, and now he supposed Manchester quoted Birmingham. Bolton, too, employed more than one architect; Bradford had two; Huddersfield employed several, with 5 per cent. remuneration on the contract, and Nottingham employed a number of architects. Therefore they would see that these enlightened districts thought it fair to give opportunities to a particular profession to compete from time to time. He objected to a single firm being employed over an enormous time when there were other gentlemen equally competent to do the work. As to the hurry to build the school in question, it was quite a surprise to him that they were on the verge of such a precipice. But he was sure that if Messrs. Martin & Chamberlain were spoken to on the subject, they would be willing to do away with any technical difficulties, if any existed, in the way of a great change in the policy of the Board.

The Chairman appealed to the Board not to delay passing the motion. The majority of the Board had for months, nay, years, been pressing upon the town the importance of erecting more schools, and that they had never failed to bring the matter before the Board, and to urge it with all the force in their power. It was not very long since the whole matter was discussed at great length, and the Board decided that it was desirable that the greatest speed should be made with the erection of six more schools, or, at any rate, with the provision of six sites, in order that the schools might be proceeded with as rapidly as possible.

The resolution was adopted.

The Rev. C. Leach moved "That notice be given to Messrs. Martin & Chamberlain to terminate all existing engagements between themselves and this Board on the 8th day of July, 1885; but that any unfinished work which Messrs. Martin & Chamberlain may have in hand on the 8th day of July, 1885, be completed by them, and that their remuneration for such remnants of work be calculated at five per cent. on the amount of the certificates granted to the contractors for work done after the said date; and that the preparation of plans and specifications for all future buildings to be erected by this Board, together with the superintendence of their erection, be thrown open to competition." He said he should be very glad if in the competition with other architects Messrs. Martin & Chamberlain's plans should be found the best, to give them his vote and support. He believed that they had done their work well, and there were more than thirty sets of schools of which he and other ratepayers were proud. In building twenty-nine schools the enormous sum of 15,000*l.* was spent in architects' commission alone. If to that sum were added the amounts received by the firm as payments for quantities and final measurements, surveyors' charges, inquiries as to sites and transfers of sites, the sum would be much larger. There would be some advantages in competition. They would get better schools. There would, too, be a little variety. They would have schools better adapted for the purpose of education, as they were getting

a long way behind, and had to make inquiries from schoolmasters and school teachers. They would get the schools built at a little cheaper rate. They might not get so many blue tiles about the buildings, nor such unsightly heaps of bricks above the roofs—heaps which, while they faintly whispered of some notion of a tower, proclaimed very loudly from the housetop a reckless waste of the ratepayers' money.

Mr. Barnes seconded the motion.

Mr. Kenrick said the question had been discussed several times, but the more people went into the question the more they would be convinced, he felt, that the Board was acting wisely in continuing its present course. The disadvantages of competition were—firstly, the expense as compared with the appointment of permanent architects; secondly, its uncertain results; and, thirdly, he did not believe it would give satisfaction to the town generally. As to the expense, they would observe that one of the towns mentioned as adopting the system of competition paid for commission at the rate of 6½ per cent. In no case where plans were offered for competition was less than 5 per cent. paid. Then it was usual to offer certain premiums, and it was very common and advisable to call in an assessor. Then it might be necessary to pay 2½ per cent. for taking out quantities, as the Board now paid Messrs. Martin & Chamberlain; and if the Board was moderately busy with building schools, as at the present time, the commission was about 3½ per cent. It was 5 per cent. on the first 5,000*l.*, and 2½ per cent. on amounts after that. The actual rate depended upon the quantity of school building. Beyond that there was 1½ per cent. for quantities, making altogether a charge of 5 per cent.; whereas, putting the plans out for competition as he had shown, meant an increased cost of exactly 50 per cent. Then, as to the second point—the uncertainty of the results of competition. It was extremely difficult from plans alone to say how a building would turn out. No doubt this difficulty could be got over by employing an official competent to advise on architectural details; but he (the speaker) would warn the Board that those gentlemen had peculiar notions and ideas as to what buildings should be, and it was extremely likely they would decide in favour of a plan which would not meet with the approval of the Board. As to the third point, he might say he had certain experiences of plans being put up for competition, and he found that the architects invited were often dissatisfied and much irritated with the result. By the present system experience was accumulated, and placed at the service of the Board. The members of the Board would come and go, but each school that was built was a fund of experience to the architect, and that fund, accumulated by constant experience, was of the greatest value to the Board. Besides securing excellent and admirable buildings, it guarded them against the extras of a contract. The extras with the present architects had been extremely small, and in some cases there had been none at all.

The Chairman said he was very glad there had been no reflection on the existing architects. Mr. Leach seemed to fancy that an architect ought to understand exactly what was the best kind of school to be erected; but the questions which the sub-committee recently met to consider were such as an architect's experience could not touch—namely, was it advisable or not that they should continue the system of having central halls, and what was the size of class-room best adapted to their purpose. With reference to the arguments against monopoly, they must remember that the monopoly was created by a previous Board, and that once created it was not easy to deal with, because a certain reflection would be cast upon the architects by any change. But after some years the Board thought it time that the work should be obtained at a smaller remuneration, and acted upon that conviction. He sympathised with the feeling which no doubt existed outside to a certain extent that it would be advantageous to have a great variety in their styles of architecture—but that was secondary altogether to the necessity of adapting buildings to their educational wants, and of using economically the money of the ratepayers. He did not desire to place Messrs. Martin & Chamberlain upon the high pinnacle Mr. Hawkes assumed the majority had imagined them to hold. When he looked at the Mason College he was at once called upon to admit that no building Messrs. Martin & Chamberlain had erected for the Board surpassed that structure in architectural merit. Mr. Chatwin had also erected for King Edward's foundation a most admirable school at Aston, and therefore he would have no hesitation in placing in Mr. Chatwin's hands the erection of a school. But these were times when the Board ought to spend no additional money unless they were very clear that there would be a sufficient return for it. They paid 250*l.* a year as a fixed salary to the architects, and 2½ per cent. commission upon all work over and above 5,000*l.* in one year. His expectation was that during the next few years they would erect two schools per annum, and 2½ per cent. upon 15,000*l.* would be 375*l.* a year as an addition to the fixed salary. But if they threw the new buildings open to competition they would have to pay 5 per cent. upon the whole 20,000*l.*, which would be 1,000*l.* Therefore, under the present arrangements, there would be a net gain of 375*l.*



The Rev. C. Leach asked if Mr. Dixon put it that a 2½ per cent. commission on schools costing more than 5,000*l.* was all that Messrs. Martin & Chamberlain received in addition to the salary of 250*l.* a year?

The Chairman said that possibly Mr. Leach might be referring to the payment for quantities, a payment which, being at the rate of 2½ per cent., was a very low commission, lower than was paid in some other towns, and was got from the builder. Messrs. Martin & Chamberlain were paid also for work done by Mr. Martin as their surveyor, and the commission in that case was also very low indeed. The result of an inquiry as to the usages of Boards in twelve other towns in the matter of architects had been to show that there were six Boards which had appointed special architects, and those Boards were some of the largest in the country—Birmingham, Sheffield, and London—while there were six Boards which had appointed two or more architects. It was not said in the replies whether these latter appointments had all been made by open competition; but, at all events, there was a considerable authority in favour of continuing the present system. The commission paid by the Boards of one architect was between 3 and 3½ per cent., by the others 5 per cent. These were the advantages of the Birmingham and London system. What was hoped for from the other system? They would gain what he might call the advantage of carrying out a sentiment—that of competition against monopoly. But they did not always think the system of open competition the best. They did not in the case of their solicitors, and the experience which a solicitor gained in transacting the business of the Board had very little to do with his decisions, whereas the experience of an architect had an enormous deal to do with the manner in which he would carry out new work. Supposing they changed their architect; what was to become of all those stores of knowledge and experience which were preserved in the head of their present architect, and which could not exist or continue in the minds of the unprofessional members of the Board? Again, they were continually requiring to consult a professional man upon work which did not lead to the erection of the buildings out of which the architect got his remuneration. They had besides that the constant supervision of the existing buildings, of which there were now thirty-three sets, worth hundreds of thousands of pounds. The reports of their clerk of works were submitted to the architect, and he gave his opinion as to whether anything should be done, and, if so, how it should be done. For that they made no payment, and there were scores of similar occasions in which, if the present arrangement were departed from, they would either not get the assistance they needed, and suffer by not getting it, or have to call in some one for the purpose, and how that person was to be remunerated would be a very difficult question. A change, moreover, would entail a great deal of additional work upon a Board which, though it could scarcely have more willing or harder workers, already found it difficult to give the necessary time to its work, and whose officials were overtaxed.

The Rev. W. H. Poulton said it was a question of two or three monopolies held by one firm, and he felt it his duty to vote for the resolution. He did not believe there would be any increase in expenditure as the result of competition.

The Rev. Dr. Crosskey denied that there was any needless waste on the part of the present architects as to ornamentation and the erection of towers, which were used as ventilating shafts on some of the schools. What had been done in this direction had been entirely by the instructions of the committee, and the qualification of taste by a little decorative work had been obtained at a sum so small as not to be worth taking into account.

Mr. Chattaway said he had formerly raised his voice against the monopoly of Messrs. Martin & Chamberlain; but at that time, like many other people now were, he was under a wrong impression—namely, that the architects were paid 5 per cent. commission with extras. As the matter now stood he should vote against the resolution.

The Rev. T. J. Haworth was of opinion that the Board had been working too much in one groove.

The Rev. E. F. M. MacCarthy expressed surprise at such a statement. Let them visit the school in Goodrick Street and the school in Loxton Street, and see the enormous change that had been effected.

Mr. Greening, in supporting the motion, referred to the recent alteration in the architects' remuneration, and observed that if other architects in the town were prepared also to accept a lower percentage the monetary difficulty would be at once removed.

The Rev. C. Leach replied, and the vote was then taken. For the resolution there were seven votes, and the same number against it. The chairman gave his casting vote against the resolution, and it was thus defeated.

**The Ecclesiastical Commissioners** propose to grant 800*l.* to meet a benefaction of a similar sum towards the rebuilding of St. Michael's Vicarage, Wakefield.

## THE LATE MR. M. E. HADFIELD.

ON Monday last Mr. Matthew Ellison Hadfield, architect, died at his house in Sheffield. By his death, says the local *Telegraph*, Sheffield loses another well-known figure, one who linked memories of the past with the movements of the present. His was a manly, self-reliant nature, well able to grapple with difficulties and to overcome them. Of handsome presence, genial spirits, and cultivated talents, he made his own way in the world, rising to a high position in his profession, and taking a prominent though unassuming part in the concerns of the town of his adoption. Sheffield has been the gainer by the long residence of Mr. Hadfield within its borders. He was born at Lees Hall, Glossop, on September 8, 1812, being the eldest son of the late Mr. Joseph Hadfield, who married a sister of the late Mr. Michael Ellison, still honourably remembered in the town as the agent of the Dukes of Norfolk, in which office he was succeeded by his son, Mr. M. J. Ellison. After receiving his education at Woolton Grove Academy, near Liverpool, young Mr. Hadfield, then only fifteen years of age, was placed with his uncle in the Duke of Norfolk's estate office. Mr. Ellison, however, discovering that his nephew had a decided talent for architecture, persuaded his father to article him to Messrs. Woodhead & Hurst, of Doncaster, a firm of very high standing in the county. The indentures were signed in 1831, and continued in force for three years, when Mr. Hadfield went to London, and succeeded in entering the office of the late Mr. P. F. Robinson, one of the architects who gained a premium in the competition for the erection of the Houses of Parliament. These years of probation called forth all the self-reliant qualities of the young man, and when he returned to Sheffield, in 1836, he had acquired confidence and experience to carry on business successfully on his own account. In 1838 he joined in partnership the late Mr. John Gray Weightman, who had been a fellow pupil, and who at the time was engaged upon the plans of the Collegiate School. Offices were taken in the Old Corn Exchange buildings, and here for twenty years a very extensive practice was conducted in all branches of architectural work. The young men threw themselves with great ardour into what was known as the "Gothic revival," then exciting the best minds of the profession, and they measured and delineated many of the old ecclesiastical edifices of Yorkshire and Lincolnshire. They had a special reputation for designs of churches, of which they erected very many in all parts of the country, and in West and South Ireland their practice was very extensive. Mr. Hadfield early in his career took part in the great railway movement which swept over the land. He became associated with the eminent engineer, Mr. John Fowler, under whom he did a great deal of architectural work for the Manchester, Sheffield, and Lincolnshire Company, designing stations and many important groups of buildings, such as the Gorton depôt and extensive buildings at Grimsby. In 1850 the firm took into partnership Mr. George Goldie, and its title then became "Weightman, Hadfield & Goldie." About the year 1858 Mr. Weightman retired, Mr. Goldie following in 1860, and in 1864 Mr. Charles Hadfield joined his father, and the firm has since been known as "M. E. Hadfield & Son."

It is noteworthy that Mr. Hadfield was employed by four Dukes of Norfolk—Bernard Edward (the twelfth duke), Henry Charles (the thirteenth), Henry Granville (the fourteenth), and Henry (the present duke). Amongst a few of the chief works of Mr. Hadfield and his partners may be mentioned the Norfolk Market Hall, the Fitzalan Market, St. Marie's Church, the Gas Offices, the Norfolk Drill Hall, the Catholic schools in Andover Street, Edmund Road, and Shoreham Street; St. Vincent's Church and clergy house, St. Joseph's Home, Queen's Tower, the residence of Mr. Samuel Roberts; Thornbury, the residence of Mr. F. T. Mappin, M.P.; Bleak House, the residence of Mr. John Fowler; the new Corn Exchange, and the new premises of Messrs. Pawson & Brailsford. The farm was designed by Mr. Hadfield on the instructions of the late Duke of Norfolk, by whose orders also he made extensive alterations at Arundel Castle. The erection of St. Marie's Church, Sheffield, was one of the works that established Mr. Hadfield's ability. He was the architect of the Roman Catholic Cathedral at Salford, and amongst other high-class designs may be mentioned Glossop Hall, Derbyshire; Boreatton Park, Shropshire; and the Great Northern Hotel, Leeds. He restored the Shrewsbury tombs in the parish church, and also the Manor Lodge. Mr. Hadfield was one of the earliest associates of the Royal Institute of British Architects. He became a fellow in May 1847, and served on the council during 1866, 1867, and 1868.

Mr. Hadfield was for three years a member of the Sheffield Town Council, and about the same time he served upon the Board of Guardians, and held the position of vice-chairman. The School of Art in Arundel Street was an institution very dear to Mr. Hadfield, who did much to advance its interests. He was present for the maximum period allowed by the trust deed, viz., three years, from 1877 to 1879 inclusive, and retained his seat on the council until his death. He was also one of



the founders of the Gentlemen's Club in Norfolk Street. He held the position of deputy-chairman for some years. Mr. Hadfield was a principal promoter and also the architect of the Royal Victoria Hotel.

Mr. Hadfield was an ardent Catholic, and interested himself very deeply in all that concerned the welfare of his Church. During the later years of his life he devoted much attention to the Roman Catholic Deaf and Dumb Institution, founded in 1870 at Handsworth Woodhouse by the distinguished Belgian philanthropist, Monsignore de Hørne, and afterwards transferred to Boston Spa, near Tadcaster. The institution, which is open to deaf and dumb Catholic children throughout Great Britain, has now 100 inmates, and it owes much of its efficiency to the watchful overlooking of Mr. Hadfield, one of whose last acts was to correct the draft of the annual report.

### ENGLISH PAINTING.

AN address was delivered by Sir Richard Temple at the annual meeting of the Worcester School of Art. In speaking of English painting the lecturer said:—As regards English domestic art, I must be allowed to point out that there is great carelessness, and has been apparently during the last century, in respect to the use of oil pigments. Our English pictures do not last. If you go to see a collection of English pictures at the Grosvenor Gallery, for instance, you will see some have turned black, some turned brown, and some have acquired a yellow hue. All this, no doubt, arises from the careless use of pigments. Our artists trust too much to cheap manufactures. The old masters looked to the making of these pigments, as upon them the permanency of their pictures would depend. Again, there was a great haste to be rich among many of our prominent painters. Most of them paint pictures that will command an immediate price, and look to that rather than to their fame with future generations. Well, perhaps that is natural in this money-making age. Our painters, of course, are like other men. But, notwithstanding, the effect upon art is prejudicial. How many of our historic painters are taking to portrait painting! And the reason is, because it pays; it brings in an immediate income. I ask you to contrast our English art with foreign art, and in what does the main difference consist? I apprehend it consists in this—that English artists perhaps excel in representing still life, and foreign artists excel in representing animated life. It is animation which makes the difference between French, German, and Italian art as compared with British. There is something so staid, so phlegmatic in our disposition that most of our English historical pictures have too much repose. Repose, of course, is a great quality for a picture, but, nevertheless, you may have too much of it. Compare any of the scenes of travel, or of active life, or of war, as painted by Frenchmen, with similar subjects painted by Englishmen, and you will see at once how the enthusiastic, nervous, mercurial, and quicksilver temperament of the French tells. Every touch painted by a French painter has life in it—life, movement, activity; it is instinct with life. That is a grand quality, in which, I must confess, we are comparatively deficient.

### TESSERÆ.

#### Town Churches.

W. BURGESS, A.R.A.

MY own private opinion with regard to town churches is that hitherto we have been playing at them, and that not a single one is worthy to be called a town church. We want churches in this city something like Angevine churches, with great thick walls, domed or vaulted, filled with mosaic inside, and perhaps majolica or mosaic or marble outside. As to putting a little village church in London it is simply absurd. London at the present day is very different from London in the Middle Ages. England in the Middle Ages was something like a third-rate kingdom; at present it is a first-rate, if not the first. London has increased enormously; we are rebuilding it as rapidly as we can, and getting houses five or six storeys high. We might get churches quite as high, and also get great masses, so as to distinguish them from the private houses. The only way to ornament them will be by the assistance of such men as Dr. Salviati, Mr. Fisher, and other artists who work in mosaic. It is an imperishable kind of ornament. If the Angevine type is taken, we can get large broad surfaces, and the mosaic can be done so many square feet a year. It is never finished, but always going on.

#### Recognition of Principle in Ornament.

R. N. WORNUM.

Provided we keep principles in sight, we may change the details at pleasure, whether symbolic or sensuous only, and thus produce that variety of effect so essential to the steady

gratification of the eye. One ornament, in fact, suggests many. On the contrary, if we appreciate only the individual details of an ornament, a whole class or genus is represented by a single specimen, and our resources are reduced to the extremest poverty of expression. This has been actually the case as regards the genus of which the honeysuckle specimen is only a variety. Instead of seizing the principle of this ornament, and treating almost any floral or vegetable, or even symbolic, form in that order of curved series, our architects have been engrossed by the details of an individual, and have acquired only one ornament in the place of thousands which must have suggested themselves had the principle itself been grasped in the first instance instead of the details of only one of its illustrations. There is scarcely a weed in England that might not be treated, on the principle of the Greek anthemion, with nearly equal effect with the honeysuckle, which is only the nearest corresponding type of the ornament in nature. The eye, however, does not admire the anthemion, the echinus, or the astragal because they may be taken from the honeysuckle, the horse-chestnut, and the hucklebone, but because they are admirable details of the illustration of those symmetries and contrasts which by the very nature of vision must, by the gratification of this one of its senses, be delightful to the mind, just as harmonies and melodies delight it through another of its senses. Where the mind views something more than the surface, or where the eyes are ancillary only to the mind, every natural object may be suggestive of some new essential form or combination of forms. The lotus, the lily, and the tulip are but flowers to the many, but to the designer they must be something more. Every individual is but an illustration of a principle, and it is to the constructive principles of his natural models that the designer should give his attention. By separating the minutiae of individual development from the essential strength and elegance of the construction he becomes a creator of new forms, and by this simple exercise of the natural facility of contrivance he combines with the beauty of nature the ingenuity of art.

#### Glasgow Cathedral.

THOMAS RICKMAN.

Glasgow Cathedral is a large and fine cross church, with remarkably short transepts. It has a towering spire at the intersection, and another tower at the west end of the north aisle. The nave and aisles form one church, the choir and aisles another. The transepts and a part of the nave are open as a vestibule for access to each church. The general character of the church is Early English, very excellently designed and executed, and although some part of the work is of later execution, the same style is well kept up. At the end of each transept are additions now in ruins. On the north side of the east end of the choir is the chapter-house, and beneath it and the choir, the crypt. The composition of the nave and choir is different, but each very good. In the choir the capitals of the piers are flowered, in the nave plain. Those in the choir very much resemble some capitals in the transepts at York Minster, and are equally well executed. The west door, now stopped, is one of great richness and beauty, and bears a strong resemblance to the doors of the Continental churches, being a double door, with a square head to each aperture, and the place above filled with good niches. The general design of the doorway is French, but the mouldings and detail English. There is an organ-screen at the entrance into the choir, and one or two ancient monuments. The crypt under the choir and chapter-house is not equalled by any in the kingdom. It is from the fall of the ground well lighted, and is an uncommonly rich specimen of Early English. The piers and groining are of the most intricate character, the most beautiful design, and excellent execution. The groins have rich bosses, and the doors are much enriched with foliage and other ornaments; the piers have fine flowered capitals, much like those in York. This church, like many others in Scotland, is not known or studied so much as it deserves to be.

#### The Look in Portraiture.

R. LIEBREICH, M.D.

To the look, painters, in their composition as well as in their portraits, have always paid great attention. In several of the old masters, it struck me that they had a sort of predilection for a certain direction of the look. Thus Murillo gives the preference to a look of ecstasy directed straight upwards, whilst Guido Reni has a certain predilection for painting an eyeball turned obliquely upwards, and he gives to this direction of the look quite a peculiar character by the posture of the head and position of the eyelids and eyebrows, imitated from the *Laocoon* or the *Niobe*. In his numerous portraits, Vandyke evidently prefers the following direction of the gaze. His portraits look somewhat to the side of the observer into the distance, and in such a manner that the heads turned to the right have their eyes directed to the left, and *vice versa*, the heads turned towards the left have their eyes directed so far to the right that sometimes the iris comes quite near the right



angle of the slit of the lids. Of course those portraits are excepted which represent two persons speaking to each other: for instance, that of Rubens by Vandyke, in the National Gallery. In sculpture the representation of the look is more difficult. There is, above all (at least in our time), the want of colour which, by defining the pupil and the iris that surrounds it, clearly indicates the position of the eyeball. Nevertheless the direction of the eyes is to be recognised, even in the ideal compositions of Classic antiquity, by the position of the eyelids and the shape of the visible part of the eyeball. In the portrait, however, especially in the purely iconic representations, the Greeks used to indicate the pupil by a small flattening of the eyeball, by which the shadow of the upper lid became broader, or they indicated the look in the way on which you see it in the busts of Demosthenes, Pericles, and Alexander the Great, the beautiful originals of which are in the British Museum. In the realistic busts of the Roman time, the pupil was indicated by a small hollow which gave shadow, and the margin of the iris or cornea was designated by a fine engraved circular line. The same, or a similar manner of indicating the pupil has been since adopted by the majority of sculptors, and it is to be considered as a misunderstanding if sculptors of a certain tendency believed that they imitated the antique in the portrait bust, when they left the eyes perfectly expressionless without pupil, with the lids and the eyeball shaped in a conventional curve, by which the inanimate look of the rest of the features was considerably increased.

#### Iron in Architecture.

E. VIOLLET LE DUC.

Men may say that iron can never be employed in our buildings in an outwardly evident manner because it does not lend itself to monumental forms; but it would be more in accordance with truth to say that existing monumental forms, being the consequences of the employment of materials possessing totally different qualities from those of iron, cannot be adapted to the latter material. The logical deduction is that we must not restrict ourselves to those forms, but must devise others appropriate to iron.

#### Etymology of Dome.

HENSLEIGH WEDGWOOD, M.A.

It is doubtful how the word "dome" came to be applied to a cupola, or vaulted roof. A cathedral is in Italian *duomo*, in German *dom*, and a dome may be so called because it was the ornament of a cathedral church. A church in general was called *domus Dei*, the house of God, and probably the name was given to a cathedral church *par excellence*. On the other hand we find that the Greek *dōma* was used for a roof. The word *domus* is commonly derived from the Greek *dēmo*, to build, but this, I believe, is putting the cart before the horse. We have the most natural derivation for the word signifying a dwelling in the notion of a hearth or fireplace. The Finnish *sawu*, signifying smoke, is applied in the second place to a house, household, family living in a house, and in like manner the Welsh *mawg*, smoke, is identical with Breton *moug* or *mog*, a fire, hearth, household, house, while a derivative *moged* is in the latter dialect used for smoke. This mode of expression is almost universal in a rude state of society. "The census includes those provinces beyond the frontiers dependent on the empire which are numbered by fire-places or houses."—"Population of China," Amer. Orient. Soc. Now the Polish *dym* (radically identical with *thumos* and *fumus*) is rendered smoke, cottage, house, while the form *dom* is also used in the latter sense. Bohemian *dym*, smoke; *dum*, a house; where the two senses are distinguished, as in Breton, by the modification *moug* and *moged*. Lithuanian *dumas*, smoke.

#### Greek and Roman Landscape Painting.

E. M. COPE, M.A.

None of the great painters of the most flourishing period of Greek art seem to have paid any attention to landscape. So much as this may, I think, be gathered from the long catalogue of paintings by all the great Greek masters given by Pliny. (Nat. Hist., lib. xxxv.) Amongst the works of Polygnotus, Timagoras, Parrhasius, Zeuxis, Pamphilus, Apelles, Protogenes, Pausias, and many others of less note which he enumerates, no nearer approach to landscape art than grapes (in the famous story of the contest between Zeuxis and Parrhasius), horses, dogs, and oxen is recorded. A certain Pyreicus was held to have degraded himself and his art by painting—what we now prize so highly in the Flemings—barbers' and cobblers' shops, asses, eatables, and such-like. Of another, Serapion, it is said "that he could paint scenes (most likely for the stage) but not men." The art of painting landscapes in fresco on walls was introduced in the reign of Augustus by one Ludius. It does not follow from this that landscapes had not been painted at all before this period. All that Pliny seems to mean is, that they had not been used earlier as ornaments for rooms. They may,

of course, have been introduced by the great masters as accessories and backgrounds for their figures; but, if so, it is at any rate evident from the general tenor of Pliny's remarks that they were of very subordinate interest. All the paintings of antiquity that have been preserved, amongst which are some landscapes, are unfortunately of a period not earlier than the second of the Roman emperors. Winckelmann, who quotes from Pliny the passage about Ludius in support of this opinion, treats no further of Greek landscape, and leaves us in the dark as to the extent to which the elder and better masters carried this branch of art. Lessing justly observes that the want of knowledge of perspective, which appears even in the later works that have been preserved, would alone have operated as a bar to a successful cultivation of landscape-painting. But the motto of all Greek artists, painters included, might have been, "The proper study of mankind is man." Art has occupied itself especially with man, and might say of him, if with more justice than Protagoras, that he is the measure and the rule of all things.

#### Sgraffito.

F. W. MOODY.

What is called the "floating" coat of ordinary plaster, which is usually three-quarters of an inch thick, having been applied to the wall, a layer of black, or any dark-coloured plaster, is then laid about a quarter of an inch thick, and above this another layer much thinner and lighter in colour. Having prepared a charcoal drawing of the figures or ornament you intend to execute, you either trace it or print it on the wet plaster; with a sharp knife you then cut through the upper layer of plaster, and, scraping it away, expose the black wherever you want it to appear. In this way you can execute in a very effective manner any ornament or subject which can be represented in two tints; by using three layers more complicated effects can be produced. I have made many experiments in sgraffito; these may be seen on the back of the New Science Schools at South Kensington. It is a most fascinating process—cheap, effective, and, I believe, durable. There is one modification of it which seems to me to promise success. By laying a thicker outer coat we have been able to carve it almost like a cameo. A frieze of amorini so executed may be seen close to the ground; and I cannot help thinking that sgraffito and the many modifications of which it is capable are well worth the attention of decorative artists and architects.

#### Never too Late to Learn.

B. R. HAYDON.

I am no friend to that lachrymose croaking about time of life: I am just as able now, at fifty-eight years, to set to work on a new acquirement as at eighteen years, and perhaps more able. "Was I to begin the world again," says Reynolds: of course he would do all sorts of things he had neglected to do, and follow Michel Angelo's steps. Now, he had been saying this forty years; why did he not at once, like Tintoretto, write over the door of his painting-room, "The day to Titian, the night to Michel Angelo?" and in six months we should have had his limbs more like legs and thighs than ninepins. Why? Because he only had the consciousness of imperfection, without sufficient power to apply the remedy. After lamenting thus to Burke, he would sit down to a game of whist, or adjourn to the club to listen to the declamations of Johnson. Let every man begin at once, not to-morrow, but to-day, not by-and-by at four, but now, at six in the morning, or as soon as it is light.

#### Assyrian Art.

ROBERT KNOX, M.D.

The Assyrian sculptures represent one race; and the artist being an Oriental, and unequal to the perception of beauty and of truth, represents all figures and every age, male and female, king and priest, lord and servant, on the same model, from which he never varies. This model is the adult male figure of the then existing Assyrian and of the modern Armenian, coarse, abounding in impossible attitudes, and with such a display of the interior, or of the naked anatomy, as to banish from the whole group the slightest pretension to beauty and truth. The limbs are coarse, muscular, and large, with the intermuscular lines or partitions deeply chiselled, as we now see them in the modern Assyrian and Turcoman generally. There is not a correctly formed hand or foot to be seen, nor woman's form anywhere; even the beauty of youth and childhood, which with the beauty of form and proportion constitutes the absolutely beautiful, they could not perceive, though it must have been constantly before them. In what regarded merely animal life the Assyrian artist was equal to the perception of truth; but in attempting to portray man he encountered the prejudices of Oriental civilisation, which forced him into the most common of all errors, the mistaking for truth and beauty the artificial, the fashionable, the conventional, the national, the studied, fanciful, and extravagant; in a word, the theatrical—the figures he found on the world's stage in Nineveh and Babylon.



## NOTES AND COMMENTS.

THE sculptor THEODORE CHARLES GRUYERE died last week in Paris. He was the winner of the Prix de Rome in 1839, and in 1846 he obtained a first-class medal in the Salon. Some of his works have been purchased by the State. In 1868 he modelled for Pondicherry a statue of the Marquis DUPLEIX, the man who, according to MACAULAY, was the first to see that it was possible to found a European empire on the ruins of the Mogul monarchy, and who first practised the arts of war and policy by which English dominion in India was created.

THE decision which was given by Vice-Chancellor BACON in the case of SMETHURST v. HASTINGS cannot fail to make people cautious in entering on building speculations. The defendants were trustees who had powers to invest certain funds in leasehold estates, and accordingly they sunk 6,887*l.* in eleven houses on the Bedford Park Estate. It was alleged that the security was insufficient, and the action was taken to recover the money with interest. After about a week's consideration the Vice-Chancellor ordered present payment of the sum invested, and an inquiry is to be taken as to the amount of interest which is due after credit has been given for all sums which have been paid in respect of interest.

THE main objection of the Vice-Chancellor was that the defendants had not taken the precaution to have what is called a "proper valuation," although both trustees had obtained a report from a surveyor who professed to be well acquainted with the estate. The Vice-Chancellor says that the standard rule is that a trustee is bound to act in the execution of his trust as a prudent man would in dealing with his own property. Apparently the trustees did so. Their surveyor may not have had the gift of prophecy, and could not tell that the Bedford Park Estate was to be made the subject of a contention between rival parochial authorities; but how can any trustee be supposed to test an expert's qualifications? It is admitted that property generally has depreciated. But, according to the Vice-Chancellor, all houses which have an artistic character are to be considered as doomed to deterioration. Considerations such as that the estate found favour with the public, that the houses had been designed by a celebrated architect, and the like, were set aside. "None of these," it was laid down, "can or ought to avail the defendants, or take away from the investments that merely speculative character which is inseparable from them." If the decision is carried out literally there is an end to speculation of all kinds, for, speaking generally, everything for which a higher interest than 3 per cent. is expected possesses a speculative character. Buildings are liable to ups and downs in the same way as molasses or tallow, and money cannot be invested in them without more or less risk. But to say that because property is "fashionable" it is to be avoided by trustees is a dictum which it would be worth while to have debated before several judges.

THE Abingdon Corporation, who invited designs for a new Corn Exchange and Cattle Market, to cost 2,000*l.*, received nine sets of plans. The committee were assisted by Professor HAYTER LEWIS, and selected the design "Bonâ fide," by Mr. C. BELL, F.R.I.B.A., of New Broad Street, London, and "Ne fac nise bene facias," by Mr. J. G. T. WEST, of Abingdon, was placed second; "Comoditas," by Mr. QUILTER, of London, was placed third; and "Z," by Mr. CODD, of Oxford, fourth. The remaining designs, all exceeding the stipulated cost, were not considered by the committee. The requirements were in excess of the proposed outlay, and as a result those architects who kept within the limits of the conditions did so at the expense of elevations. The premiums which fall to Nos. 2, 3, and 4 will not tend to raise the respect due to the ancient borough of Abingdon, at least in the profession, the dignitaries considering 5*l.*, 3*l.*, and 2*l.* an equivalent for the time and pains taken by the unsuccessful men.

It was explained lately by the Rev. G. PRESTON that the streets of Chester correspond exactly with the "ways" of a Roman camp. The following reasons were given. As

thoroughfares in constant use for centuries they would not be likely to be built over, rights of way being always as jealously guarded amongst the Romans as amongst ourselves. Buildings may disappear, but roads and streets (unless after a general conflagration or under a despotically paternal form of Government) do not. Indeed, the antiquary might find some interest in tracing the correspondence of King Street, Princess Street, and the whole of the other streets and passages opening southwards on the south sides of Northgate Street and Bridge Street, to the passages on the Porta-Decumana side of the Via Principalis in a Roman camp. A question was raised by Mr. PRESTON—Why in Chester, which is so much of a Roman city, are there so many gables to be seen in the streets, when we know that in Rome these were only allowed in temples, or occasionally in the houses of pre-eminent Romans, on whom was bestowed the privilege of having a "fastigium" (gable) as a sort of divine honour? No answer was, however, given, and the silence suggests that the Cheshire archaeologists do not attach much value to necessity and convenience.

ONE of the pictures in the exhibition of the Water-Colour Society in Rome is a view of the church of St. Bartholomew the Great in Smithfield. The interior of the building is about the most impressive in London. But everyone is puzzled at the extraordinary encroachment of the adjoining premises across the ambulatory and into the sanctuary. A more strange example of the indifference of churchwardens, clergy, and congregations is not to be found in England. There is now an opportunity to remove the evil. The premises have been offered to the rector and churchwardens for 6,500*l.*, with a refusal till April 3. It is quite impossible for them to raise so large a sum by any means within their personal reach. After careful deliberation, they are driven to make a public appeal for funds. The case is briefly thus:—A shoeing forge standing on the site of the north transept, valued at 1,150*l.*, and a fringe factory standing on the site of the Lady Chapel, valued at 6,500*l.*, are offered for sale. The patron, the Rev. F. P. PHILLIPS, has given the large sum of 2,000*l.* towards the restoration of the church; but unless an additional sum of 7,000*l.* can be obtained by April 3 the purchase cannot be effected, and, if not, this ancient religious site will pass into the hands of the speculative builder and altogether disappear—the beautiful church of Prior Rahere, dating from A.D. 1103, will remain disfigured, desecrated, and exposed to imminent danger from fire.

IF Mr. CARLYLE were now alive, he would point to the agreement between the Government and Messrs. LUCAS & AIRD as a testimony of the truth of his saying that the subject of the modern epic is "Tools and the Man," not "Arms and the Man." It is almost the first time that contractors and navvies have been utilised, for the work in the Crimea of the kind was not extensive. The contractors' charges are not exorbitant, amounting to no more than 2 per cent. on the outlay, or in all 20,000*l.* This is a small sum compared with the price paid as commission on the purchase of the Suez Canal shares.

A COMPETITION has been instituted in Geneva which is suggestive of how well the Swiss manage to promote art without undergoing enormous expense. The section of Decorative Arts in the Genevese Society of Arts having been enriched by five hundred francs, it has been resolved to dispose of the money for the designs which shall be most expressive of the relations and contrasts between Force and Grace. Every one who is living in the city can compete, and there is no restriction as to the class of work. Embroidery, design, painting, sculpture, engraving, marquetry, metal-work, are alike eligible, and while it is permitted to use an existing work of art as a means of inspiration, every servile copy is to be summarily rejected. The jury will consist of thirty members, who are to select the work in which the symbolic idea is shown with most originality and clearness. If the originality of several works should be equal, then finish and elegance of execution are to be considered. The competition is a test of artistic inspiration, and as such might well be imitated in an English town where there is an art school. The works are to be sent in before May 11.















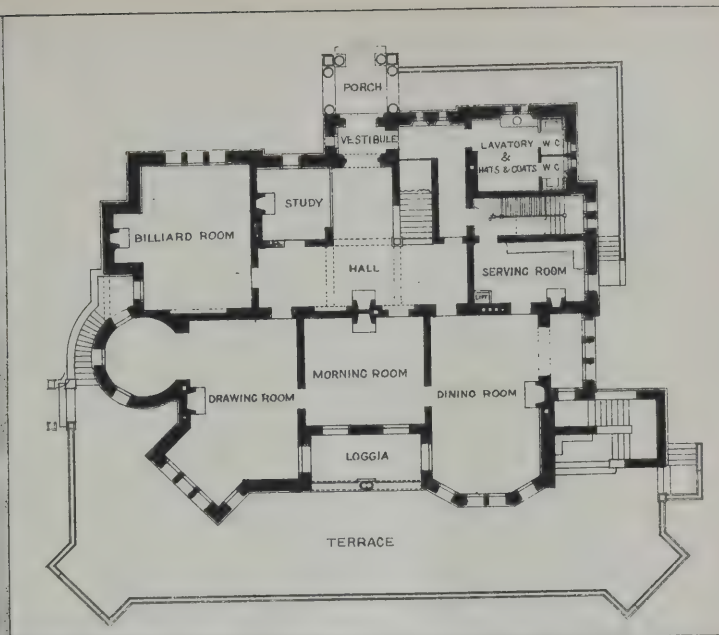


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## ILLUSTRATIONS.

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THE "AURORA," BY GUIDO RENI.

CRITICS have differed in expressing their judgments on the works of GUIDO, but there is a general unanimity about *The Aurora*, which is seen on the ceiling of the casino in the Rospigliosi Palace, Rome. BURCKHARDT is not alone when he says:—"Among modern painters GUIDO in his *Aurora* approaches the nearest to an exalted and free beauty (*hohen und freien Schönheit*), and all things considered, that painting is the most perfect of those which have been produced during the last two centuries?" The painting is so much superior to the majority of GUIDO's works, it is not surprising to find it stated that the design has been taken from an antique bas-relief, which at his time was to be found in the cloister of St. Paul's at Rome.

GUIDO RENI was born in Bologna on November 4, 1575. His father DANIEL was a musician, and it was his desire that his son should likewise adopt music as a profession, but although GUIDO became a respectable performer, it was found very early that Nature had intended him to be a painter. He was placed in the *atelier* of the Fleming DENYS CALVART, but the pupil soon surpassed the master. Then he was attracted by the CARACCI, like many more artists of that age, for the Bolognese were supposed to be the precursors of a new style in which all the merits of the best Roman, Venetian, and Florentine work were to be united. His first picture was *Orpheus and Eurydice*, and it was accepted with general applause. Flushed by success GUIDO attempted fresco painting, and again was successful. With the exception of DOMENICHINO he was the most promising follower of the school, and it is related that LUDOVICO CARACCI became jealous of so much genius, and endeavoured to put GUERCINO before him. His fame reached Rome, and he soon visited the Eternal City. It was at the time when ANNIBALE CARACCI was employed in painting the Farnese Gallery. GUIDO was put in opposition to CARAVAGGIO, and a struggle was commenced which endured for many years. It is remarkable that GUIDO in his first manner was an imitator of his enemy's style. The style which he afterwards adopted, and which is now taken as characteristic of him, might be said to have been the result of a chance remark. It is related that ANNIBALE CARACCI was one day discussing CARAVAGGIO's style, and pointed out that there was room for something which should be the very opposite. The words were an inspiration to GUIDO, who henceforth laboured in the direction suggested: instead of gloom, he sought for brightness and elegance, gave clear outlines, and substituted figures of an exalted type for the commonplace subjects which he had been in the habit of painting.

There was as much difference in character as in style between the two men, and the swaggering CARAVAGGIO appears to have had little difficulty in frightening his rival. But a triumph was gained when a picture of the *Martyrdom of St. Peter*, which had been ordered by Cardinal BORGHESI, was taken out of the hands of CARAVAGGIO in order to be completed by GUIDO.

In time his partisans began to doubt the wisdom of raising a power like GUIDO, and they soon turned their skill to fomenting discords against him. Rome was made too hot for GUIDO, and, as his imagination exaggerated his danger, he fled secretly to Bologna. PAUL V. was then pope, and he blamed those who had aided the escape of the painter. GUIDO was recalled. But it was not until he had received the summons several times that he went back. He was entrusted with many commissions, but his fears continued, and, when he had completed his work, he again sought refuge in Bologna.

His works were in much request, and he might have become one of the richest painters of his time, but GUIDO was kept poor by his passion for gambling. Such, at least, is the tradition, although it may have no more foundation in reality than many others relating to Italian painters. All

his works are not of equal merit, and the existence of so many mediocre paintings, which have been attributed to GUIDO, is supposed to be due to his eagerness to secure funds for the gaming-table. He was attractive as a master, and his studio was crowded with pupils. Under the circumstances there were facilities to produce an unlimited number of "pot-boilers," and GUIDO may have utilised the willing hands which were at his service. His patrons at length became dissatisfied, and GUIDO's latter years were, it is said, embittered by poverty. He died in 1642.

GUIDO is one of the artists who have been selected for commendation by REYNOLDS, on the ground that while their relation to the School of the Caraccis is sufficiently apparent, they "have yet the appearance of men who extended their views beyond the model that lay before them, and have shown that they had opinions of their own, and thought for themselves after they had made themselves masters of the general principles of their schools." In other words, there is a style about his works which is nearly always attractive. It has been said that GUIDO shows more signs of technical skill than of inspiration, and if we accepted some criticisms as conclusive, he was as mechanical in his arrangements as PERUGINO. The following discriminating criticism from LANZI will suggest the merits as well as the defects of the artist.

He was more particularly attentive to the correct form of beauty, especially in his youthful heads. Here, in the opinion of Mengs, he surpassed all others, and, according to Passeri's expression, he drew faces of Paradise. In these Rome abounds more richly than Bologna itself. The *Fortune* in the Capitol, the *Aurora* belonging to the Rospigliosi, the *Helen* to the Spada, the *Herodias* to the Corsini, the *Magdalen* to the Barberini, with other subjects in possession of several princes, are regarded as the wonders of Guido's art. This power of beauty was, in the words of Albano (his most bitter and constant rival), the gift of nature, though the whole was the result of his own intense study of natural beauty, and of Raphael, and of the ancient statues, medals, and cameos. He declared that the *Medicean Venus* and the *Niobe* were his most favourite models; and it is seldom we do not recognise in his painting either Niobe herself or one of her children, though diversified in a variety of manner with such exquisite skill as in no way to appear borrowed. In the same way did Guido derive advantage from Raphael, Correggio, Parmegiano, and from his beloved Paul Veronese, from all whom he selected innumerable beauties, but with such happy freedom of hand as to excite the envy of the Caracci. And, in truth, the artist aimed less at copying beautiful countenances than at forming for himself a certain general and abstract idea of beauty, as we know was done by the Greeks, and this he modulated and animated in his own style. I find mention that, being interrogated by one of his pupils, "in what part of heaven and in what mould existed those wondrous features which he only drew," he pointed to the casts of the antique heads just alluded to, adding, "You, too, may gather from such examples beauties similar to those in my pictures, if your skill be equal to the task." I find, moreover, that he took for model of one of his *Magdalens* the extremely vulgar head of a colour-grinder; but under Guido's hand every defect disappeared, each part became graceful, the whole a miracle. Thus, too, in his naked figures he reduced them, whatever they were, to a perfect form, more especially in the hands and feet, in which he is singular; and the same in his draperies, which he often drew from the prints of Albert Durer, enriching them, freed from their dryness, with those flowing folds or that grandeur of disposition best adapted to the subject. To portraits themselves, while he preserved the forms and age of the originals, he gave a certain air of novelty and grace such as we see in that of *Sixtus V.*, placed in the Galli Palace at Osimo, or in that wonderful one of *Cardinal Spada*, in possession of some of his descendants at Rome.

It is generally believed that the Goddess of the Dawn, who precedes APOLLO and the Hours, is the best figure in the picture. Why there should be seven Hours around the car has not been determined. The number may have been fixed by some canon of the school of the Caraccis, which made ten figures sufficient. It was at one time supposed that the picture was one of those which had been painted on a copper trellis, and fixed afterwards on the ceiling of the casino; but a careful investigation shows that it is painted on a brick lining, and nails are said to have been driven into it probably to *key* the plaster.

The Bishop of Gloucester and Bristol has been offered 10,000*l.* for the erection of a memorial church in the diocese.



## THE ARCHITECTURAL ASSOCIATION.

THE eleventh ordinary meeting of the Association was held on Friday evening, the 6th inst., Mr. Cole A. Adams, president, in the chair. The visit for Saturday (to-day), the 14th inst., was announced to be made to the Hampstead Hospital (Mr. Charles Bell, architect), and to the new Beer-bottling Stores at Kentish Town (Mr. T. K. Green, architect). In connection with the previous visit to Collingham Gardens, votes of thanks were awarded to Mr. A. Waterhouse, A.R.A., the architect; to Mr. L. W. Leeds, for explaining the warming arrangements; and to Messrs. Peto Bros., the contractors. A presentation to the library on the part of Mr. J. L. Pearson, R.A., of a copy of his report on Westminster Hall was announced; as also of forty-nine mounted drawings made by the late Mr. R. C. Page, while holder of the Pugin Travelling Studentship, on the part of his sister.

Mr. J. SLATER then read a paper on

### Building Stones.

The author, after considering the early use of stone, said that he proposed in his lecture to confine himself to the three kinds which are chiefly used for building, viz., granite, sandstones, and limestones. The difference between stratified or sedimentary rocks, and unstratified or metamorphic, was described. It was afterwards explained that granite was one of the earliest stones to be employed, and that wherever it was the staple building stone the architecture was of a somewhat severe and massive type. As a rule, no signs of lamination are visible, and consequently it is not so important in the case of granite as with other stones that it should be laid on its natural bed; but wherever distinct signs of lamination are seen, then it should always be laid on its bed. If granite is required for an extremely exposed situation the grey will probably be found the most useful.

Sandstone is chiefly composed of grains of quartz united by various kinds of cementitious material, either silicious, ferruginous, or calcareous, and it is mainly upon the nature of this cementing substance that the suitability of the stone for building purposes depends. From the composition of sandstone it is less liable to be affected by the weather than limestone, but still great care in selecting a sandstone is required, as the evil results of using inferior qualities are sadly apparent in Chester, Carlisle, and Durham.

Sandstone is composed mainly of the sedimentary deposits of inorganic matter, whereas limestone is largely, and in some cases almost exclusively, formed of the stratified organic remains of living creatures of low organisation. Limestones may be classed for building purposes as crystalline, magnesian, and oolitic. The crystalline limestone generally exists in the form of marble. The Derbyshire, Devonshire, Purbeck, and Irish marbles are now becoming more extensively used for ornamental work; but it should never be forgotten, however tempting it may be to adorn the façades of modern buildings with beautiful variegated marble columns, that the constitution of the material is such that it will not stand if exposed to a smoky atmosphere. The magnesian limestones or dolomites are amongst the best building stones in this country. As a rule they are slightly crystalline, composed in the main of carbonate of lime and carbonate of magnesia with a little silica. At Mansfield, however, the red magnesian limestone has so large a proportion of silica—nearly 50 per cent.—that it is difficult to decide whether to call it a sandstone or a limestone, and, *ceteris paribus*, the silica in a stone determines largely its durability.

The oolitic limestones comprise the well-known Bath and Portland beds, and the renowned Caen stone of Normandy is of the same formation. There are four distinct bands of stone in the series, viz., 1. The inferior oolite, which occurs chiefly in Gloucestershire, from which the stone for Gloucester Cathedral and Tewkesbury Abbey was obtained. The best quarry at the present time is at Painswick. 2. The great or Bath oolite, which is of considerable thickness in the neighbourhood of Bath, and is generally worked by tunnelling, as in Messrs. Pictor's quarries at Box, which extend for many miles underground, and large piers of stone have to be left to support the roof of the workings. Very large blocks of this stone can be obtained. Amongst the best known quarries of Bath stone may be mentioned Corsham Down, Monk's Park, Coombe Down, Box Hill, and Doulting. 3. Coral rag, which passes from Somerset to Yorkshire with numerous interruptions. This is a rubbly stone, and is hardly ever found sufficiently compact to be used for building purposes. 4. Portland stone. This is harder and more durable than most of the lower members of the oolitic series; it is cream-coloured and full of organic remains; in fact, such a quantity of large fossils are found in it that it is unsuited for delicate work. Of the oolitic limestones Portland is certainly the best adapted to resist atmospheric influences, but the modern stone does not seem to be so hard as that which was used in the seventeenth century. In France the great oolite formation yields the

beautiful Caen stone, which is very fine-grained and uniform in texture. This stone has been largely exported into England, and no finer stone can be used for interior work; but many parts of Canterbury Cathedral show only too plainly that it cannot be depended upon in a damp climate for exterior use.

It is necessary that we should have some sort of notion of the causes of the decay of stone. These are, in the main, two—disintegration and decomposition—the former acting mechanically and the latter chemically, and the two causes generally act together. All stones, even granite, absorb a certain quantity of moisture, and, as a general rule, those which absorb the most water are most liable to disintegration, because, after absorption, on the occurrence of the slightest frost, the absorbed water expands, and, by mere mechanical pressure, forces apart the minute particles of which the stone is composed. Hence the rate at which a stone absorbs water and the readiness with which it parts with it are very important elements to be considered, much more so, in fact, than the total amount of water which a stone will take up. It is the constantly-recurring showers and the generally moist atmosphere of this country which play such havoc with our building stones, and it will be readily understood that if one sample of stone when completely saturated absorbs 10 per cent. of its own weight of water and another only 8 per cent., yet if the former takes three times as long as the latter to become saturated, it is, *ceteris paribus*, the better stone. No kind of stone is so variable in this property of absorbing moisture as sandstone, and hence it is extremely important to test it beforehand.

In London, and in any place where the climate is damp and the atmosphere smoky, the mechanical disintegration of stone is largely assisted and frequently started by chemical decomposition. The sulphurous and hydrochloric acids in the atmosphere, which are readily taken up by rain-water, act upon the calcareous ingredients of stone, producing oxidation or hydration; where mineral salts occur, various chemical reactions take place, and minute crystals are formed in the interior of the stone which effloresce outwards; and where organic matter exists, as is the case in nearly all stratified deposits, this gives rise to nitration. Inorganic matter, such as the quartz-crystals which form so large a component in the structure of granite, and the eroded grains of which enter very largely into the composition of many of the sandstones, is not acted on by these acids, so that in a sandstone the nature of the cementitious material which binds the grains together is the important point to be looked to; the more silicious this is and the less calcareous the better. In fact, it may be laid down as a general rule that the more silica there is in a stone the better. If the cementing substance is calcareous, that is, composed of lime, its presence can be detected by the use of dilute hydrochloric acid poured on the stone, which will cause effervescence, and if a powerful action is set up this will show that carbonate of lime is present in considerable quantities. In limestones the main constituent is carbonate of lime. In the magnesian limestones there is a certain proportion of silica, and they are also crystalline in texture, and it is to these qualities that they owe their durability, but their chief constituents are carbonate of lime and carbonate of magnesia. The Commissioners of 1839, who recommended the use of this stone for the Houses of Parliament, correctly appreciated its good qualities, but they appear totally to have ignored the fact that magnesia has a strong affinity for sulphur, which exists so largely in the London atmosphere, and hence has resulted the terrible decay in the stone used in the Houses of Parliament. When we come to the oolitic sandstones, such as Bath, we find no silica at all, but almost entirely carbonate of lime; but as the stone is soft and easily worked, it has been largely used for copings and dressings to brick-built houses in London, and it looks very well when first put up. But in the case of the majority of the pretentious stone enrichments of suburban houses, no care whatever has been taken that the stone should be weathered before using, and it is no uncommon thing to find such stone crumbling away after two years' exposure. But however well this stone may have been weathered, it is extremely doubtful whether it ought under any circumstances to be used in a smoky atmosphere. For dry climates where there is little smoke, and for internal work, it is, however, admirably adapted, as it can easily be worked into most intricate mouldings; but it must always be remembered that in external work elaboration of ornament means increased liability to decay.

The mechanical properties of a stone are no less important. It should be examined for (1) its hardness: a soft, easily-cut stone will not, as a rule, be so durable as a hard crystalline one; (2) its weight: as the denser a stone is, *i.e.*, the greater its specific weight, the more likely it is to last; (3) its compactness, *i.e.*, the closeness of its structure; (4) its porosity; and (5) its colour, if uniformity is desirable. Mr. Hull says that an original bluish-grey tint should be avoided, as this indicates the presence of iron, and oxidation will frequently produce an uneven yellowish tint. These tests are easily made. There are two other very simple practical tests. One is called Smith's test, and it is to take some small chippings from a piece of stone



which has been well wetted and put them in a glass of water, and let them remain for some time, and then gently shake the glass; if the water gets somewhat turbid it shows that there is a certain amount of earthy matter present in the stone. Another test is to boil small pieces of the stone in a solution of sulphate of soda, after which the stone will disintegrate if it be of a perishable nature. This test is, however, a very severe one, and every stone which did not stand it need not be discarded.

When a stone has once begun to decay it is very difficult to stop the process, but several different methods of treating the stone on its first being fixed in order to prevent decay have been recommended, such as Szerelmey's, Hutchinson's, Ransome's, Kühnman's, and others. Boiled linseed oil certainly prevents water entering the pores of a stone, but it slightly darkens the colour, and the application ought probably to be renewed every few years.

There is a familiar clause in a specification which says that stone should always be laid on its natural bed, and it is well that we should all clearly understand why this is so desirable. Nearly all our building-stones have been formed by the deposit of sedimentary matter, layer upon layer, and, however compact a stone thus formed may now appear, all these layers are really existent. A building-stone may be said to resemble a great piece of cardboard a foot thick formed of numerous sheets of paper gummed together and then pressed into a compact mass. If the cardboard were pressed in the same way in which it was pressed during its manufacture, it would only be consolidated the more; but if placed on end and squeezed, there would not be much difficulty in separating the various sheets from one another, and they would soon begin to fall away. This is precisely what takes place when stone is not laid on its natural bed. The ordinary pressure of superincumbent weight might not actually squeeze out the layers of stone, but it would tend to loosen them, and would greatly facilitate the entrance of water between the layers, which would speedily begin to flake off. Another practical point which should always be carefully attended to is that the bedding joints of blocks of stone should be accurately dressed and perfectly level. If this is not looked to, unequal pressure and cross strains will be set up; and stone is one of the worst materials possible to resist cross strains, which is the reason why we so frequently see lintels over window openings cracked.

Stone should never be taken on the credit of its name. The quality of the stone extracted from a quarry is always changing, and for a large building it is necessary constantly to examine the blocks of stone as they are delivered from the quarry. If this is done—if specimens of stone are subjected to a few simple tests—a great deal of worry and disappointment will be avoided.

The PRESIDENT remarked on the difficulty of knowing the bed of a stone after it had been once worked. Speaking of the decay of the stone of the Houses of Parliament, he suggested a theory he had heard advanced by a thoroughly practical and thoughtful architect, that the decay was due to cleaning down the stone after it had been fixed some time instead of cleaning down as the work was carried up, after which only water should be applied to it. After stone has been placed in position a certain efflorescence forms on the surface, which should never be disturbed, as it was an effort of nature bringing about case hardening. He had heard also that dipping stone into lime-water produced case hardening. Linseed oil applied to stone would probably sink in about  $\frac{1}{4}$  inch. Would this make the surface of the stone fall away? In the case of the Elgin marbles, being painted, the oil would have sunk in a certain distance and perhaps caused the surface to flake off to that extent.

Mr. RIDDETT proposed a vote of thanks to Mr. Slater. He remembered that since Wren's time the facilities of traffic had afforded an almost unrestricted choice of stone, but, after all, he thought there was no better stone than Portland for London. Caen stone had had its turn, and Bath stone: the use of this was simple robbery of clients. Stone, no doubt, was like a brand of cigars, and, while the particular bed of stone held out, answered all expectations formed of it. The Henry Clay brand of cigar had continued to be manufactured for years, though there had been none of the leaf since 1879. He thought at the Houses of Parliament the bed of stone had been worked out, and that stone had to be got from another bed. The late C. H. Smith had offered to test every stone put in the building, and the Government were quite willing to accept the offer provided Sir Chas. Barry would pay Mr. Smith. Painting stone tended to seal damp inside the stone; preservatives all had a basis of shellac, and in time the stone must go.

Mr. BLAGROVE seconded the vote of thanks with a few remarks.

Mr. LEONARD STOKES followed in support of the vote.

The PRESIDENT put the vote and it was carried by acclamation.

Mr. SLATER, in his reply, said he agreed that the use of Caen or Bath stone, in London, was to be deprecated.

Victoria stone, or concrete, gave far more durability than any stone M. Viollet le Duc always placed his stone, and had the carving put on at once, and it never was touched after.

## LIVERPOOL ARCHITECTURAL SOCIETY.

THE fourth ordinary meeting of this Society for the current session was held at the rooms, No. 9 Cook Street, on the evening of Wednesday, the 4th inst., Mr. Thomas Mercer, vice-president, in the chair. There was a good attendance of members. It was announced that the Council had decided to award the prize for the best series of sketches executed during the recess by a member of the Sketching Club, to Mr. Walter H. Brierley. Mr. Mercer then read the paper for the evening, by the late W. Pettit Griffith, F.S.A., entitled "The Rigid *versus* the Subtle Styles of Architecture," the proceedings terminating with the usual vote of thanks.

## REPAIR OF CATHEDRALS.

A BILL has been introduced by the Chancellor of the Exchequer and Mr. Hibbert, which has for its object to make better provision respecting the repair of cathedrals and the endowment of deans and chapters in England. It proposes to give powers by which every dean and chapter in England shall set apart a fabric fund amounting to such a sum as may be fixed on the report of the Ecclesiastical Commissioners. Within a year after the order has been made the dean and chapter shall not be entitled to receive for their own use any sum out of the capitular revenues until the fabric fund or a proper proportionate part of it has been set apart. The fund is to be a first charge on the capitular revenues, or obtained in any other way approved by the Commissioners. Accounts are to be annually submitted to the Commissioners showing all expenditure on account of the fund. A dean and chapter may borrow, and the Ecclesiastical Commissioners may lend, on the security of the fabric fund, any capital sum required for the restoration or repair of the capitular buildings, and the dean and chapter may mortgage the fabric fund to the said Commissioners for the purpose of securing the repayment of the sum; the money so borrowed shall be expended to the satisfaction of the Commissioners in substantial repairs, restoration, and improvements of the capitular buildings. Any surplus of the fabric fund in any year over and above the expenditure is to be invested by the dean and chapter until required for the purposes of the fabric fund.

Every dean and canon appointed after the passing of the Act is to be liable to repair any house and other buildings and premises, to the exclusive occupation of which he is entitled in respect of his deanery or canonry, to the same extent as any rector is liable in respect of the house, buildings, and premises belonging to the rectory, and is not to be entitled to any contribution out of the revenues of the dean and chapter in respect of such repair. Provided that where, before the passing of this Act, by any law or custom any such repairs have, in the case of any house, building, or premises of any deanery or canonry been wholly or partly executed at the cost of the revenues of any dean and chapter, the person who first after the passing of this Act succeeds the dean or canon holding such deanery or canonry at the passing of this Act may receive out of the revenues of the dean and chapter such reasonable sum in respect of dilapidations as the Ecclesiastical Commissioners may under the circumstances allow.

In interpreting the clauses, the expression "capitular buildings" is to be taken as meaning the cathedral or collegiate church and the buildings belonging thereto, but does not include any buildings to the exclusive occupation of which any dean or canon is entitled, nor any buildings which are let either at an annual rent or on payment of a fine.

## THE MANCHESTER TOWN HALL.

ON Monday in the Court of Appeal, before Lords Justices Cotton, Bowen, and Fry, there were heard two appeals from an order of Mr. Justice Chitty, who had refused to vary the official referee's finding in respect of a reference made to him. The dispute arose out of the contract to build the Manchester Town Hall, which was accepted at 192,574*l*. The schedule of quantities was filled up by the firm of George Smith & Co., and was accepted by Mr. Waterhouse on behalf of the Corporation on January 17, 1871. The contract, which was expected would be one of profit, turned out to be a serious loss. In March 1872 the partnership of the contractors' firm came to an end, when Mr. Taylor, one of the partners, intimated his intention of retiring from the firm, and accounts were then taken in the usual way. At that date the expenditure upon the Town Hall was 127,462*l*. 9*s*., which was actual cost,



and the value of the work done, according to the schedule of prices, was 73,648*l.* 7*s.* 6*d.* Messrs. Fuller, Horsey & Co. reported that the value of the material and plant was 19,008*l.* The referee found, after hearing the evidence of parties, that the value of the work done was 34,693*l.*, and that the material and plant was worth 22,745*l.* 9*s.* 3*d.* It was contended on behalf of the defendants that there had been much larger deductions made than there ought to have been. The contractors found after they had sent in their tender that they had not "monied" out the ashlar work, which was a considerable item, and when they discovered the mistake they applied to Mr. Waterhouse for the Corporation to amend their tender, but he refused to do it on the ground that it would be most unfair to the other contractors who had tendered. He however gave them the liberty to withdraw their tender on account of the error, but they declined to do it. Subsequently the Corporation allowed the contractors a sum of 10,000*l.* towards the cost of the ashlar work. The representatives of Mr. Taylor now claimed to have an equal share of the amount which had been allowed by the Corporation.

Mr. Philbrick said that there were a great many points in dispute between them, but he thought some arrangement might be come to to avoid the further hearing of the case.

After consultation, Mr. Fullerton said that if the case were allowed to stand over it would probably be arranged.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### BARRY'S DESIGN FOR THE HOUSES OF PARLIAMENT.

AT a time when the inquiry into the proposed restoration of Westminster Hall has been resumed, it may be interesting to publish the description given by Charles Barry of the principles by which he was governed in making his design for the Houses of Parliament, which comprised an alteration of Westminster Hall. The document was handed in to the Select Committee of the House of Lords on March 8, 1836.

*Style.*—That of the styles proposed, Gothic or Elizabethan, the former of the Tudor period is preferable, as being homogeneous, well defined, and in harmony with the existing ancient buildings proposed to be preserved; whereas the latter is only an incongruous mixture of two styles in their decline, thus being utterly unworthy of the character of a great national edifice as a work of art, besides being at variance with the character of the existing buildings.

*Ancient Buildings.*—That the Hall, the crypt of St. Stephen's Chapel, and the cloister and chapels attached to the late Speaker's residence be preserved, and converted to useful purposes, and that St. Stephen's Chapel be rebuilt.

*Position of Proposed Building.*—That the building be set forward to the east into the river, in order to obtain an enlargement of the two Palace Yards, and thereby make them spacious quadrangles; and that the line of iron frontage be made, as nearly as possible, at right angles with Westminster Bridge; which, it will be seen by a reference to the official plan of the site, is but effected by a line drawn directly from the extremities of the frontage.

*Entrances.*—That the entrance to the Commons and the principal public entrance to both Houses be in Palace Yard, and that the king's and peers' entrances to the House of Lords be in Old Palace Yard, in order that a material portion of the great influx of people attending the Houses may be arrested at the nearest point, namely, New Palace Yard, and that the entrance into Old Palace Yard may be freed from unnecessary obstruction.

*Public Access.*—That, for the greater convenience of approach for the public generally, entrances be made at the south end of Westminster Hall, from Old Palace Yard, and at the old entrance of the House of Commons, opposite Henry VII.'s Chapel.

*River Entrances and Terrace.*—That private entrances to the Houses be made from the river, and a private terrace provided for the recreation of members of both Houses.

*External Approach.*—That, in order to widen as much as possible the entrance into Old Palace Yard, the footpath, which is at present in front of the Italian building containing the Law Courts, be placed in a cloister within such building, which will not only allow the whole width between its south-western angle and the Abbey to be given up to a carriage-road, but also provide a covered walk from Old Palace Yard to New Palace Yard, which, it is presumed, will be found of great convenience for alighting from, and entering into, carriages, and

advantageous as a sheltered walk for persons having to wait in the neighbourhood of the Houses.

*Enclosing East End of New Palace Yard.*—That the east end of New Palace Yard be closed by the river front, in order to shut out from Westminster Bridge an unfavourable view of Westminster Hall, the Abbey, &c., produced by viewing them so much above their ground level; also, for preventing cold draughts of air from the river, which would render the quadrangle an unfit place for horses to be kept in waiting; also for shutting out an unsightly view of the bridge, as seen from Parliament Square, and the quadrangle itself; and, lastly, in order to avoid the necessity of occupying the property on the east side of Abingdon Street, the fee simple of which, alone, would not be of less cost than from 70,000*l.* to 80,000*l.*

*Elevation and Character of River Front.*—That the river front be lofty, and as little broken as may be desirable, to avoid monotony; that the lower, or ground storey and terrace be as simple and as solid as possible, in order to accord with the plainness of the bridge, and form a bold base to the building; and that the superstructure only be of a decorative character, so that the building may present a lofty, imposing, and ornate appearance when viewed from Westminster Bridge.

*Architectural Composition.*—That all the entire mass of building forming the Houses and adjuncts be treated, in its architectural composition, as a single edifice, for the sake of unity, public character, and effect; and that towers be placed at the extreme ends of the proposed mass of building, in order that it may group with the Abbey, &c., and have an imposing effect when viewed with that building. That the details of the river front be large, and those of the other fronts small; as the former can only be viewed from a distance, whereas the latter will be subject to a much closer inspection.

*Palace Yard Fronts.*—That the fronts towards the New and Old Palace Yards and Parliament Square be kept as low as is compatible with the height of the river front, in order not to reduce the importance of Westminster Hall, which must necessarily be a very essential feature of the proposed mass of building, when viewed from the two Palace Yards.

*Approaches generally.*—That the several internal approaches for the king, the lords, the commons, and the public be distinct from each other, and easy of communication when desired.

*King's Entrance.*—That the state entrance for the king be from the south-eastern angle of Old Palace Yard, through a tower, proposed to be of sufficient size to receive the state carriage, which is intended to set down at the foot of a flight of steps of considerable width, leading to a landing hall and gallery, communicating with the king's robing-room at the back of the throne end of the House of Lords. The upper part of the tower to be appropriated to records.

*Peers' Entrance.*—That the private entrance for peers be direct from Old Palace Yard, by means of a flight of steps communicating with a large private lobby, affording access to the House either at the throne or bar ends; and that a distinct approach be provided for the bishops from a quadrangle east of the House to their dressing-rooms, and thence into the House at the throne end, on the opposite side to the entrance for the lay peers. That a water entrance be also provided, to communicate directly with the lobbies and corridors adjoining the House.

*Commons' Entrance.*—That the private entrance for the members of the House of Commons be direct from New Palace Yard, by a flight of steps communicating with a private lobby at the bar end of the House; and that a water entrance be also provided for their accommodation, communicating with the private lobby alluded to, and the corridors adjoining the House.

*Public Entrance.*—That Westminster Hall be the lobby, in common, between the Courts of Law and the Houses of Parliament, and also the grand public approach to the latter; and that for the last-mentioned purpose, as well as to carry on a dignified character of design in such approach, on a scale suitable to the character of the Hall itself, a handsome porch, with a flight of steps, be added at the south end of the Hall, with an opening into it of the rise of the present window when cut down to the level of the porch floor. That from such porch the approach be continued through St. Stephen's Chapel (proposed to be rebuilt, and called St. Stephen's Hall), into a central lobby of great size, lighted by an octagonal lantern midway between the two Houses, and in immediate connection with the public lobbies attached to each; that from such central lobby the public approach be direct, by means of a flight of steps of considerable width, to the committee-rooms in the river front; and that other committee-rooms be provided on the principal floor, with public access to them from St. Stephen's Hall, by which the private accommodation for members of the two Houses may not be interfered with. The porch proposed at the south end of Westminster Hall will present a feature of great interest in the view of the interior, and cause that splendid room to appear only as a part of a great whole, instead of being, as hitherto, an apparently isolated room, without



being any other than as a lobby for counsel and persons in attendance on the Courts of Law.

*Light and Ventilation of Houses and Committee-rooms, and Level of principal Floor.*—That, in consequence of the great height of the Hall, and the level of high-water mark, neither the Houses nor any of the committee-rooms be upon the level of the ground storey; but that, for the sake of height, good light, freedom from damp, and ventilation, they be placed on the principal floor, which is proposed to be made to accord with the old floor of St. Stephen's Chapel.

*Appropriation of Ground Storey.*—That the ground storey be wholly appropriated to record-rooms, public and private approaches, kitchen offices for the several residences which form part of the edifice, kitchen courts, and quadrangles of approach, cellarage under the Houses for warming and ventilating, &c.; and for many other useful purposes, such as store-rooms, clerk of works offices, workshops, &c. Perhaps it might be desirable to have also in this storey a public coffee-house, for the use of the bar and persons attending the Courts of Law and Houses of Parliament.

*Position of Houses.*—That the situation of the Houses be in the centre of the mass of the proposed building, for the sake of convenience, quietude, and freedom from all disturbances from the exterior; also for affording the means of making them of the forms and size best suited to the wants of each House, without interfering with the unity of character maintained throughout the exterior; that all the lobbies and corridors adjoining them be only one storey high, to admit of their being well lighted and ventilated.

*Warming and Ventilating.*—That the warming of the Houses, committee-rooms, libraries, public and private lobbies, and corridors, be by means of warm water in pipes; that the ventilation of them be effected by a very minutely subdivided admission of tempered air from the floor; and that in the Houses especially the current upwards of heated and vitiated air be promoted by means of rarefaction created in a chamber above the ceiling, the air passing into such chamber through the perforated sides of a raised panel in the centre of the ceiling.

*Acoustic Principle of the Houses.*—That, for the purpose of rendering the Houses effective rooms for hearing, in addition to the forms proposed, a continued sounding-board be affixed, so as to surround each House above the seat against the wall; that the walls be entirely lined with oak affixed to battening; and that the ceiling be also entirely lined with oak.

#### HOUSE OF LORDS.

*Form and Arrangement.*—That the form of the House of Lords be an oblong, placed longitudinally to the approach; and that the internal arrangements be in all respects in accordance with those of the old House; that seats for distinguished visitors be above the cove forming the sounding-board over the seat against the walls; that two small, lateral, receding galleries be provided at the throne end; and that the gallery for strangers and reporters be at the bar end; that the lobbies and corridors entirely surround the House.

#### HOUSE OF COMMONS.

*Form and Arrangement.*—That the form of the House of Commons be an oblong, nearly approaching to a square, placed transversely to the approach, and arranged so that the distance from the bar to the chair shall not exceed that in the old House. That the seats for members shall be on the ground floor, and in receding galleries, and all within the least possible distance from the Speaker's chair. That the seats for peers, Speaker's orders, and reporters, be at the chair end of the House; and those for strangers in a gallery at the bar end. That the lobbies and corridors entirely surround the House.

*Libraries and Refreshment Rooms.*—That the libraries and refreshment rooms be upon the level of the floor of the Houses, immediately adjoining and communicating with the private lobbies, so as to be entirely free from intrusion from strangers at all times.

*Committee Rooms.*—That a large proportion of the committee-rooms be upon the principal floor, and the rest in the floor above; that none of them be less than 20 feet of clear height; and that as many of them as possible be placed towards the river front, for the sake of cheerfulness, good light, and ventilation.

*Lords' State Officers.*—That the rooms for the state officers of the House of Lords be in the front towards Old Palace Yard.

*Public Offices.*—That the public offices be immediately adjoining and contiguous to each House, with distinct access for members and the public thereto.

*Official Residences.*—That the whole of the official residences be incorporated in the design for the proposed building, without disturbing its unity of character; and that the principal rooms of each residence be upon the principal floors of the entire edifice, with immediate communication therewith.

#### THE BLACK GATE, NEWCASTLE.

THE Black Gate, in Newcastle-on-Tyne, has been acquired by the local Society of Antiquaries and converted into a museum. The contract for the reconstruction was 1,400*l.*, but with extras, work at the castle, architect's commission, &c., the cost has been about 1,700*l.*

The museum has been opened by the Earl of Ravensworth, president of the Society, and in the address his lordship said that the Black Gate was formerly let out in a parcel of very dirty tenements; it was in imminent danger of being destroyed, and it was through the exertions of many of their leading members and the kindness of the Corporation that the Society acquired it upon liberal terms, and upon a lease which he hoped they would continue to enjoy. They would have an opportunity of seeing what they had never seen before—most interesting Roman altars, votive tablets, and inscribed stones of every description. These had been disposed in various corners and holes of the castle, where it was perfectly impossible for anybody to read them. Now they were displayed in the Black Gate, and the student of antiquarian lore could, with the assistance of learned antiquaries, trace out, with chronological accuracy, and almost historic truth, the history of the Roman occupation, which was remarkable, not altogether as a conquest, but it was the era, the earliest era, of which they knew of English history, of civilisation, and the introduction of fine arts into this country which were previously unknown to our barbaric ancestors. The Romans, who were undoubtedly the greatest military power that ever existed, did not content themselves with merely subduing the people, but taught them the fine arts which they themselves had derived from the Greeks. The works of the great sculptor Phidias, who lived 400 or 500 years before Christ, had never been surpassed or equalled, which showed that there was little new under the sun. Newcastle and its neighbourhood had always been held up as the birth-place of engineering and the cradle of engineering science, and it was curious that they should possess instances of the greatest possible strategic military skill, in that wonderful Roman wall. On entering the Black Gate they would see distinctly where the old portcullis stood. The roadway appeared to have turned very short to the right. Very soon after they had passed the gate, about 15 or 20 paces, stood the roadway, which for many years was called the Black Gate Street. This led to the second gate, which was a very interesting locality. The second gate guarded the drawbridge over the moat, but it was exceedingly difficult, if not impossible, to trace the course of the moat. It formed one of the four entrances from the inner line of fortification, which was always known as the inner wall. Going westward they came to the old gate, which faced as near as possible due west. There were two more gates, the south postern, which faced the Castle Stairs, and which now led down to the Close, and there was the east postern gate, which now led down the Dog Leap Stairs into the Side. Those were the four gates, as far as he could trace. The second gate was flanked by two localities of a very sinister character indeed. On the east and west sides there were pits, which were neither more or less than two gloomy dungeons. It was through the Black Gate that the unfortunate captives condemned to death were led to the place of execution. He had a certain interest in the castle, not only as being a member of the Society of Antiquaries, but he did not know whether many of them knew that his ancestors were the leaseholders of the Castle Garth for a great many years. It was in 1736 that his ancestor Colonel Liddell entered into a competition with the municipality of the town for the renewal of the lease. Colonel Liddell had the best of it, and obtained the lease from the Crown. He held the lease for its term under very curious payment—viz., so many chaldrons of coal, and obtained the lease for the payment of 600*l.* In 1756 the reversion of the lease was again purchased by Lord Ravensworth, who was the nephew of Colonel Liddell. The lease was sold by members of his family to a Mr. Turner, and in 1811, when the Turner estate was sold, the Corporation of Newcastle regained possession of the Castle Garth and its surroundings.

#### EDINBURGH ARCHITECTURAL ASSOCIATION.

THE members of the Edinburgh Architectural Association paid a visit on Saturday to Corstorphine Church and neighbourhood. The party, conducted by the president of the Association (Mr. G. Washington Browne), went first to Old Saughton House. On the way to the parish church, the site of the old castle of Corstorphine was pointed out, as well as the sycamore tree which is said to have been the scene of the murder of the last Lord Forrester. The old stone-built pigeon-house, which belonged to the manor of Corstorphine, and which contains about a thousand pigeon-holes, was also visited. On reaching the church, the party gathered at the entrance, where Mr. Browne gave a short historical account of the earlier



churches which existed before the present collegiate church. Referring to the origin of the name Corstorphine, he said there was a theory that it was a corruption of the French or Norman "Crois d'orfin," and that received some colour from the tradition that the Marechals were strong supporters of the Church, and from the fact that in the first chapel there was a cross in fine gold, but in the foundation charter of 1128 the word was spelt "Crosdorphin," and it was incredible that the French term could have become so corrupted at that early date. The more reasonable theory appeared to him to be that it was simply the Cross of Torphin. That name was not uncommon, and there was a large tract of land in the neighbourhood of West Calder known as Torphin's land. Adam Forrester, the founder of the Corstorphine branch of the family, was a wealthy burgess and Provost of Edinburgh, and purchased the estate of Corstorphine from the Mores of Abercorn, who succeeded to Le Marechals, the earliest recorded lords of the manor of Corstorphine. He took a prominent part in the political history of his time, was knighted in 1402, and died in 1404. The arms and shields which were originally on his tomb are now built into the wall of a little session-house on the west side of the belfry-tower. The earliest record of the first chapel of Corstorphine, which was dedicated to St. Mary, is in the foundation charter of Holyrood House, under date 1128, when the chapel of Corstorphine was added to the abbey of Holyrood. The second chapel, which was dedicated to John the Baptist, was founded at a later date, and was incorporated in the present collegiate church, founded in 1429 by the first Sir John Forrester. Of this edifice the only parts remaining are the chancel, the Forrester vault, and the belfry tower. The old parish church was taken down in 1646, and a new aisle built, which now forms the south aisle and transept of the church. The north aisle and transept were added in 1826. Inside the church the chief points of interest are the old sedilia and piscina in the south wall of the chancel now the vestibule of the parish church—and the three tombs of the Forresters—two in the north wall of the chancel and one in the south transept. The former are in deeply-recessed arches, and contain the remains of the first Sir John Forrester, the founder of the collegiate church, who died in 1440, and his son, the second Sir John Forrester, who died in 1454. The one in the south transept was long reputed to be the tomb of Sir Bernard Smith of Aubigny, who died in Forrester's Castle at Corstorphine, but who was now generally acknowledged to have been buried in Blackfriars' Church, Edinburgh; and it had been established by the best authorities that the third tomb was that of Sir Alexander Forrester, son of the second Sir John, who in 1464 led a pilgrimage to the shrine of Thomas à Becket, and subsequently another to the Continent. In the chancel of the church the company were shown an old sand-glass, said to have been used by John Knox when preaching in Corstorphine. Gibson Lodge, which is reputed to have been built as a portion-house for one of the Dowager Lady Forresters, was next visited. It is a plain, simple, well-proportioned house, displaying no points of marked architectural interest. Cordial votes of thanks were here passed to Mr. Dickson, of Saughton, who had accompanied the party, for his courtesy in throwing open his house; and to Mr. Browne for his interesting description of the places visited.



#### The Restoration of Westminster Abbey.

SIR,—In the interesting paper which was read by Mr Waterhouse at the Academy upon the history and architectural details of Westminster Abbey, particularly upon the lamentable decay of the stone used from time to time in its external construction and repair, these words occurred:—"You will see, therefore, that Westminster Abbey is practically a geological museum of the greatest interest and value to the architect practising in London, enabling him to watch the effect of its climate on almost every description of building stone in common use, *except it be the sandstones so much used in the North*. The terrible effects of our present climate are strikingly exemplified." The italics are the writer's. As will be seen below, there is some point in the exception.

A dozen different places have furnished materials and an additional one—Chilmark in Wiltshire—must be added to the list, as from this locality the stone is being brought for the present extensive restoration. Whether this is a wise selection remains to be seen. Probably this stone was used by the late Sir Gilbert Scott for the restoration of the lower part of the north transept, and if so, Mr. Pearson, the present Abbey architect, may consider that he had no choice but to continue

applying it above that part. But it is never too late to mend if a false step has been taken, and, as this is an interesting, as well as a very important practical, question, it is the hope of eliciting some information as to the durability of Chilmark stone in the destructive atmosphere of London that induces me to write these few words. Though I know it as a beautiful stone for work in the country, that alone is no recommendation for it here, and a trial, an experiment, ought to be out of the question under the circumstances. I should like, therefore, with your permission, to ask what is known of this stone that proves it will be any more durable than those that have previously failed at the Abbey or in its neighbourhood? Is it not an almost unknown stone in London? I can learn nothing satisfactory myself. What I do find is the reverse. It was examined by Professors Wheatstone and Daniell, but rejected by the Royal Commission of 1838. Mr. Hull, the geologist and chemist, one of the latest and best authorities, has not a word to say in its favour in his book on "Building and Ornamental Stones." In fact, he never mentions it, though he speaks of many others from the same formation, remarking that they are all unreliable in smoky towns. Burnell, Ansted, and Paine are silent; but, although there is little special information available, the geology of the district shows that no stone but an oolite can come from Chilmark in Wiltshire, and we know that all oolites and other limestones have decayed with more or less rapidity in London. What else can be expected when they contain about 90 per cent. of carbonate of lime, which effervesces freely at the touch of dilute muriatic, nitric, and other acids—acids ever present in the air of London? Dr. M'Cormack analysed a piece of stone from the old parts of Lambeth Palace, and found hydrochloric acid some inches below the surface, and to that depth the stone was quite disintegrated. The Abbey officials declare they know glazing days at Lambeth from the sulphurous taste of the air. The terrible effects of our present climate upon stone are strikingly exemplified by an incident which occurred in taking down the Chapter-house. Some ashlar was found of Henry III.'s time, with masons' tool marks remaining. The stones were reused externally by Sir Gilbert Scott, and the marks disappeared in less than a year. What emphatic evidence this is of the absolute necessity and duty of London architects to cast aside these unreliable and worthless limestones, and to substitute a trustworthy material worthy of their skill.

Well, sir, it would not be worth while to write all this, nor for you to allow it to be printed, if there was no available remedy, even if a little extra cost should be incurred in the first instance. I say in the first instance, because experience shows that it would ultimately be recovered, for has not the Government been compelled to invest a nice little fortune of 70,000*l.* to provide for the annual expenses of repairing a limestone palace within a stone-throw of the Abbey, which would have been saved if a durable stone had been used? An experience of many years as an architect in the populous towns of the Northern and Midland counties, where limestone is only used for fluxing iron ores, justifies my saying that the carboniferous sandstones with their 90 per cent. of silica and 1 per cent. only of carbonate of lime are the only materials, except the igneous rocks, which are durable in the destructive air of London. For proof, look at the Nelson Column, the Craigleith stone of which has withstood forty years of exposure without injury. The nearest sandstone quarries of Derbyshire are only a few miles more distant than is Chilmark in Wiltshire. With a good trade in prospect, London contractors would doubtless obtain one stone as cheaply as the other, railway managers being always ready for business. The question of extra cost of working hard sandstone is not very serious, as machinery has long been used for beds and joints.

I think, then, if there is any truth in what I have said, the limestones should disappear from specifications for the masonry of buildings of any importance in London, and should be confined to private work under the usual short leases—to showy and rich carving in Bath stone that will last only a few years.

As to the Chilmark stone now being used at the glorious old Abbey, I shall be well pleased to find I am mistaken in thinking so lightly of it as an urban material; but with the evidence I have adduced against it, such an opinion is inevitable.

In conclusion, my only object in this criticism is to aid in terminating the melancholy display of unscientific procedure exhibited by Mr. Waterhouse's catalogue of failures—which, unfortunately, might be very much extended.

Your obedient servant,  
H. TRAVIS.

#### Technical Education and Schools of Art.

SIR,—From personal experience I can say that since the year 1852, schools of art have had one constant aim, namely, the teaching of any and everybody who chooses to learn; and by assisting those who cannot afford the market value of the instruction to use their eyes and fingers, and to place



before the pupils and the public the best and most standard works of all periods of artistic activity as a national benefit, which could not be done by private enterprise.

Whether this is not on too wide a basis to be of much service, from a trading point of view, I cannot say, but I think it is the only one upon which a Government subsidy could be asked or granted.

With all respect for the inquiry now going on, and the opinions of so many eminent men upon this subject of "technical education," I cannot see how any system of "school education" can supply the place of the apprenticeship in the workshop, or supersede the responsibility of the master manufacturers of teaching lads their trade; but the State does supply the practical and intellectual training of a high character to qualify them for a more ready understanding of their business.

That the details of administration by the Department are always conceived or carried out in the best possible way may be doubted; but I am still convinced, after twenty-eight years of actual work, that the one great principle underlying the whole scheme is correct, and that to attempt to introduce a trading element practically would be unwise, impolitic, and useless, if not quite impracticable. I find the great hindrance to youths making greater effort is the want of any hope of promotion in their shop.

As a cotemporary of Mr. Walter Smith, I feel sorry to find that he has so completely altered his opinion, as I remember the time when he was a champion of the cause; but I think he is now a little too dogmatical in his statements.

I have just ascertained that the statements attributed to Mr. Minton, in reference to the Derby School of Art, are incorrect.

Yours, &c.,

AN ART MASTER.

#### Dry Glazing.

SIR,—As so many complaints are being made from time to time respecting the system of "dry glazing," owing to the glass blowing out and becoming loose, and also letting in the wet, may we be allowed to state as briefly as possible some of the causes of this, and also to show to your numerous readers and the profession at large how the same can be remedied and the evil overcome. The many systems of dry glazing now afloat call for a complete inspection and test, so that a thorough comparison of their merits and objections may be met, inasmuch as the sun, acting upon the upper or top part of the bar, so draws it away from the glass that the wind drives the water under the bar, and it of course finds its way in—hence the complaint. Also in time the glass gets loose and is blown out, whilst the rest is left in a very shaky and noisy condition. Many systems also adopt thick paint, indiarubber, felt, and springs, with nuts and bolts. These all, more or less, tend to do more harm than good, and should never be allowed.

Now the glazing we adopt and make is known as the Victoria Dry Glazing, Sam Deards' Patent, Harlow, and is constructed in the following manner:—One zinc or copper bar is made like the small letter *x*, on either side of which we slip in the glass over this bar. We slide our cap as shown in



section, which holds the glass so firmly that, however the wind may blow, yet not a drop of water can enter; and, more than this, by the form of our bar always taking that of the letter *x*, the bar is clipping the glass continually and having, when the cap is slipped on, a firm grasp of the glass, and yet allows of

equal expansion whenever required. We never use any paint, putty, cement, indiarubber, springs, nuts, or bolts of any kind whatever, but merely one screw on top of cap to keep same from slipping, which in no wise interferes with the arrangement of the glass.

As a proof of the many thousands of feet of glass we have supplied and fixed, we have one notable instance on the top of a house five storeys high—Mr. Mayall's studio, opposite the Marble Arch, exposed to the heavy gales and winds for the past three years across Hyde Park, and though the wind has sometimes been enough almost to blow it over, yet it has not been able to blow in one drop of rain.

The glazing we patent and make is now largely used at the Fisheries, Health, and the International Inventions Exhibition. Altogether some 50,000 feet have been used there, and we have given a guarantee that the same is watertight. We shall exhibit at the Building Exhibition, Stand No. 10, Agricultural Hall, next week, and also have a large conservatory erected in the centre of the south promenade at the International Inventions Exhibition during this year. Trusting this letter will receive the due attention of your many readers; any further inquiries we shall be pleased to reply to.

Your obedient servants,

Harlow: March 9.

W. & S. DEARDS.

#### LEGAL.

##### Basingstoke County Court.

BARKER v. DANIEL.

##### ECCLESIASTICAL DILAPIDATIONS ACT.

This was an action brought by Mr. A. R. Barker, architect, to recover 28*l.* 17*s.* 9*d.* from the Rev. A. E. Daniel, rector of Bradley, being the balance of fees due to him, as the diocesan architect and surveyor, in respect of repairs done at Bradley rectory under the Ecclesiastical Dilapidations Act. The plaintiff, in accordance with the bishop's instructions, inspected the rectory in January 1883, and reported on the repairs necessary to be executed under the Dilapidations Act. He also acted for Mr. Daniel privately in superintending certain alterations and additions not falling within the scope of the Act. Negotiations were then opened with the governors of Queen Anne's Bounty, but it was not until October of the same year that a grant was received from them, the amounts paid being 28*l.* for dilapidations, 21*s.* for additions, and 20*s.* for surveyor's fees. Mr. Barker sent, in his claim for 48*l.* 17*s.* 9*d.*, including copies of his report, visits to the rectory, inspecting the work and preparing the plans, and from this he deducted the 20*s.* above mentioned. The contract, it was stated, had been placed in the builder's hands before October, but the work was not proceeded with until after that date, pending the completion of the financial arrangements, and some delay consequently took place, the work being finally completed about March. It was contended that as the rectory was nine miles from Basingstoke, the builder's task was very arduous, and that Mr. Barker could not enforce a penalty for delay provided for in the contract, in respect of which Mr. Daniel now brought a counter-claim. The plaintiff was examined at length in regard to his services. In answer to defendant's solicitor, he said the specification was carried out in the spirit if not in the letter, and he would swear that there had been no interview at which it had been arranged he should accept 5 per cent. on the total outlay to cover all his charges. Mr. C. Wilkins, the builder, also gave evidence. For the defence it was maintained that during a conversation at the rectory, Mr. Barker agreed that his charge, including certificates, should be 5 per cent. on the outlay. He contended further that several things mentioned in the specification had not been carried out, and that Mr. Barker was responsible for this. The Rev. A. E. Daniel gave evidence in support of these statements, and spoke positively as to the arrangement for paying Mr. Barker 5 per cent. commission, to include all his charges. The Assistant Judge said the case was one of considerable difficulty, but he had done his best to give attention to all that had been said. The great difficulty was as to the arrangement for payment by 5 per cent. on the outlay, as to which he had the clearest affirmative from Mr. Daniel and the clearest possible negative from Mr. Barker. In the absence of a line of writing to guide him, he had considerable difficulty, but on the whole his mind was on the side of the defendant. He should therefore give judgment for 24*l.* 15*s.* 7*d.* (5 per cent. on the outlay), and the first item in plaintiff's claim, viz., 6*l.* 11*s.* 8*d.*, for the report and travelling expenses, to which plaintiff was clearly entitled. Deducting from this the amount paid by the Queen Anne's Bounty, there would remain a balance in plaintiff's favour of 11*l.* 7*s.* 3*d.* With regard to the counter-claim he had no such difficulty, for the complaints raised since Mr. Barker began his action should have been settled between Mr. Daniel and the builder. He should therefore dismiss the counter-claim. Plaintiff was allowed costs on the amount of his judgment, and the counter-claim costs were refused.

#### SCHOOL BUILDINGS.

**Edinburgh.**—The plans have been completed by Mr. Wilson, architect, for the South Bridge School, for 1,060 children, which is to be erected on part of the Old Infirmary grounds. On the ground floor towards Drummond Street is the infant department, consisting of three class-rooms, the largest 37 feet by 24 feet, and the others 30 feet by 23 feet. These rooms have movable partitions. At the other side of the school are three juvenile class-rooms, one being the sewing-room. The largest of the three is 31 feet by 24 feet; the other two are each 30 feet by 23 feet. Between these schoolrooms are the entrance doorways and corridors, with cloak-rooms adjoining, and there is on the west side a room for the infant mistress, and on the east a room for the janitor. Separate staircases leading to the flat above are placed in the centre of the landing. On the half landing are cloak-rooms and teachers' rooms. On the upper floor the eight rooms into which it is divided are grouped round the central staircases. The largest of these rooms is 37 feet by 24 feet, and the others are 30 feet by 23 feet. Three of the rooms, as on the ground floor, can, if necessary, be thrown into one large hall. Downstairs the rooms are about 16 feet high; upstairs they are 2 feet more. It is expected that the building will not cost more than 8,000*l.*



## CHURCH BUILDING AND RESTORATION.

**Birmingham.**—A Wesleyan chapel was opened on Wednesday in Gurling Road, Edgbaston. Eventually it is to be used as a lecture-hall and school. Following out the American idea of a central hall, with class-rooms opening out of it, the new chapel has been designed to consist of a main hall, 60 feet by 23 feet, with ten compartments or class-rooms adjoining. The rooms, which are about 12 feet square, are divided from the principal apartment by glazed and revolving partitions and curtains, so that when required they can all be made available for congregational purposes. Provision is also made for the addition of other class-rooms when necessary, and the position of the superintendent's desk enables him to overlook the whole of the class-rooms when occupied by the scholars. Including the class-rooms, the interior dimensions of the building are 55 feet by 60 feet. In place of the conventional pulpit there is a rostrum at the recessed end of the building, and the floor is fitted with pews and chairs for a congregation of 400 persons. The chapel is built of red bricks, with red stone dressings; and in constructing a half-timbered gable the architect has not only made a novel departure from the usual architectural features of a place of worship, but has added picturesqueness. The builders were Messrs. J. Smith & Sons, and Mr. Ewen Harper, 57 Colmore Row, was the architect.

**Plymouth.**—The preliminaries for building the new church at the top of North Hill, opposite the junction with North Road, are almost completed. Messrs. Hine and Odgers, of Plymouth, are the architects. The style will be Perpendicular Gothic. The nave will be of five bays, having clerestories above, pierced by three-light windows. There will be north and south aisles, a chancel 33 feet in length, with clergy and choir vestries on the north side, and an organ-chamber on the south. The tower, battlemented and with pinnacles (and without spire), will be at the west end of the nave, the west doorway being the principal entrance to the church. The tower will be in three stages, and 90 feet in height from the lower floor to the top of the parapet. The ground-floor of the tower will form a spacious vestibule. The windows are of two, three, four, and five lights, with characteristic mouldings and heads, and the window at the east end will be a seven-light one. The roofs will be of the hammer-beam type, and will not be of great "pitch." The church is designed to seat (exclusive of the chancel) 600 persons.

## GENERAL.

**Mr. R. B. Browning**, the painter, was on Monday (which was his thirty-sixth birthday) presented by some of the members of the Browning Society with a set of the various English, American, and Tauchnitz editions of the poems of Mrs. Elizabeth Barrett Browning.

**An Exhibition of Water-colours** will be held in the Corporation Galleries at Brighton in May. Drawings are to be sent to the Pavilion before April 18.

**A Photographic Exhibition**, consisting of the works of amateurs, will be held in New Bond Street next month. Mr. Faed, R.A., and Mr. Mason Jackson will be the judges.

**Mr. Oulless, R.A.**, has completed the portrait of Sir Edward Baines, which is to be placed in the Mayor's Room at Leeds.

**The Collection** of Wedgwood cameos, medallions, busts, and plaques belonging to Mr. T. S. Walker, of Liverpool, will be sold at Messrs. Christie's on April 22 and 23.

**The Sales of Pictures** from the Exhibition of the Glasgow Institute of Fine Arts amounted up to the end of last week to 2,193*l.* 18*s.* 6*d.* Sixty-nine pictures have been sold out of the Manchester Academy of Fine Arts, amounting to about 1,600*l.*

**The Print Room of the British Museum** has been enriched by three drawings by Henry Fuseli, R.A. The subjects are characteristic—viz., *The Nightmare*, *Prometheus*, and *The Destroying Angel*.

**A Music Room** is in course of erection on the vacant ground at the north-east of St. Mary's Cathedral, Edinburgh.

**The Fire** which broke out in the triforium of Glasgow Cathedral on Sunday morning did not cause damage to the extent of more than 50*l.*, as it was speedily extinguished by the caretaker. The origin of the fire is supposed to have been the overheating of a flue in connection with the warming apparatus.

**Mr. T. Hawksley** has asked the Liverpool Water Committee to relieve him of his position as consulting engineer in connection with the construction of the new Vyrnwy Water-works. Mr. Hawksley at the same time intimates his willingness to give the committee the benefit of his experience, should they at any time desire it in the future progress of the works.

**Mr. J. O. Scott** has completed the plans for the restoration of St. Michael's, Coventry. It is proposed to commence the work with the tower and steeple, and perhaps the east end. Four years are to be allowed for the tower.

**A Bust of Robert Burns**, by Sir John Steell, R.S.A. which has been placed in Westminster Abbey, was unveiled on Saturday. The position is in Poet's Corner on the wall against which the monument to Shakespeare stands, immediately above that of Thomson, Southey's being at a corresponding elevation to the left.

**Mr. Armstead, R.A.**, has completed the model of the statue of Lieutenant Waghorn, which is to be erected in Chatham. The pioneer of the overland route is represented in naval uniform, standing bare-headed, with one hand outstretched as if pointing across the desert.

**The Statue of Mr. Leeman, late M.P. for York**, having been completed by Mr. G. W. Milburn, will be unveiled on April 13.

**The Civil Service Estimates** include 10,000*l.* on account of the new Admiralty and War Office, and 10,000*l.* for restoration of Westminster Hall.

**Mr. Gabbutt**, of Liverpool, has obtained the contract for the erection of new law courts, offices, and fire-station at Nottingham, amounting to 61,700*l.*

**Birmingham Architectural Association.**—At last week's meeting a paper was read by Mr. W. Doubleday, on "Symbolism in Art." The lecturer expressed his opinion that the age of symbolism had not passed away, and that in modern architectural works the necessity of symbolic representation would frequently occur, more especially in churches. In the discussion, Messrs. H. H. McConnal, Victor Scruton, J. Cotton, and F. W. Cross took part.

**Steel Sleepers** are to be laid on a length of three-quarters of a mile on the North-Eastern Railway as an experiment. They are 9 feet in length, 9 inches wide, and weigh about 2 cwt. each.

**Mr. J. G. Smith** has offered to pay the cost of restoring the north and south aisles of the chancel of All Saints Church, Maidstone.

**The New Station Platform** on the Glasgow and South-Western Railway at Dumfries has been completed. It is 1,000 feet in length.

**The Bradford Corporation** have a Bill in Parliament for the purpose of raising 450,000*l.* for the improvement of the water supply.

**Mr. A. Banks**, of Oldham, has prepared plans for new Congregational Sunday-schools in that town.

**The Committee** for the Restoration of the Great Screen in Winchester Cathedral, as a memorial of Archdeacon Jacob, have resolved—"That the names of Mr. Bodley and Mr. John D. Sedding be forwarded to the Dean and Chapter, with a recommendation that one or other be selected as the architect."

**The Dunfermline Town Council** have obtained by bequest Sir George Harvey's *Pompeii*, and Sir Noel Paton's *Seizure of Roger Mortimer in Warwick Castle*.

**The Music Committee of the Corporation of London** have decided to recommend that a piece of ground on the Victoria Embankment be secured, and that a building worthy the Corporation be erected thereon at a cost not exceeding 20,000*l.* In the new building it is proposed to have thirty-eight class-rooms, a practice-room, and the usual offices.

**Mr. W. W. Macfarlane** read a paper before the Edinburgh Architectural Association on Monday, upon "The Painter." The author claimed for the decorative painter a position equal to that of the pictorial artist, not only on account of the widespread interest his work was attracting, but also for its educative quality.

**Mr. Archibald Muir** has obtained a warrant to erect forty self-contained houses in a street to be formed near Cambridge Avenue, Pilrig, Leith. The new street will be named Cambridge Gardens, and the houses will be two storeys in height.

**The Working Masons** of Edinburgh have commenced an agitation for securing the eight hours' system. At present the nine hours' system is adopted.

**Mr. John Steel**, of Greenock, has secured the contract for the sheds and warehouses which are about to be erected by the Greenock Harbour Trust at the James Watt Dock.

**The Royal Commission** on the Dwellings of the Working Classes will visit Scotland at Easter, for the purpose of hearing evidence.

**The Restoration of Westminster Hall.**—At the meeting of the Parliamentary Committee on Tuesday, Mr. William Morris gave evidence. He said that the pulling-down of the old Law Courts had exposed to view the side of Westminster Hall and the remains of the foundation; and these, he thought, should be left visible. It was said that it would be necessary to do something for the protection of the side of the wall. He did not think that any measure for that purpose would be necessary; but he contended that if anything was done, it should be merely in the way of protection, and not an attempt at reproduction of the original architecture. It was one of the views of his society that all additions to ancient buildings should be conspicuously modern.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MARCH 14, 1885.

## THE LONDON, TILBURY, AND SOUTH-END RAILWAY COMPANY'S NEW GOODS DEPOT.

THE London, Tilbury, and Southend Railway Company are now building a goods depot and range of warehouses in Whitechapel, which, when completed, will rank amongst the most important of similar undertakings to be found in England. The site on which this depot is being constructed extends from the Blackwall Railway to the Commercial Road, the branch line to the depot, and sidings leaving the main line at the east end of Leman Street Station. The area occupied by the goods station is about 8 acres, and the cost of acquiring the property was £20,000. The Blackwall Railway runs on a viaduct about 17 feet above the street, and the whole of this area has been covered with an arrangement of arches to bring the new depot up to the same level, the road approaches from the main entrance in Commercial Road being made on an incline of one in thirty to the level of the station. The covered portion, or goods station proper, will be 600 feet long by 200 feet wide, and will be occupied by five lines of rails, three platforms 20 feet wide, and three cart roadways, each 30 feet wide, running the whole length of the building. Over this station, and carried by cast-iron columns 2 feet 6 inches in diameter, and a network of steel girders, a warehouse, four storeys high, will be constructed for the exclusive use of the East and West India Dock Company. The available floor-space in this warehouse will be about 12 acres. There will be twenty-five hydraulic cranes on the platforms in the stations, and twenty-four hydraulic lifts, each capable of carrying two tons, will convey goods direct from the platforms to either floor of the warehouse above. By these means the unloading and warehousing of a whole trainload of goods from the docks will be accomplished in a very short space of time. At the south end of the station a hydraulic crane, capable of lifting 20 tons, will be fixed for loading and unloading heavy machinery, &c., and the whole of the shunting will be done by hydraulic capstans fixed in convenient positions. The warehouses will be fireproof, the floors being carried on steel girders amounting in the aggregate to about 8,000 tons in weight. In order to insure the stability of this enormous structure the foundations have been carried down into the London clay about 24 feet below the surface, and are constructed of Portland cement concrete, the piers carrying the main girders being built in blue Staffordshire bricks to the top of the building. On the lower or street level the arching has been so arranged that rails, platforms, &c., can be laid down, and there will consequently be two large railway depôts, one above the other, over the whole area, the upper and lower storeys being connected by hydraulic lifts for the lowering and raising of the railway trucks. The whole of the five lines of rails and the platforms are carried on the patent steel-decking, manufactured and supplied by Messrs. Lindsay & Co., of South Wharf, Paddington.

The works are being carried out by Mr. A. L. Stride, M.Inst.C.E., the engineer and manager of the company, under the superintendence of Mr. Wm. McDonald, the resident engineer. The general contract has been entrusted to Messrs. John Mowlem & Co., of Grosvenor Wharf, and the hydraulic machinery and appliances are being supplied by Sir Wm. Armstrong & Co., Limited. The depot is to be ready for use by the time the docks at Tilbury are opened for business.

## COMPETITIONS OPEN.

**COLCHESTER.**—March 25.—Designs are required for Remodelling and part Rebuilding the Cups Hotel. Mr. H. H. Elwes, Secretary, Exchange and Cups Hotel Company, Colchester.

**CROYDON.**—March 25.—The Corporation desire to Improve Streets in centre of Town of Croydon, and offer prizes of 100%, 30%, and 25% for the three best sets of Plans. Mr. C. M. Elborough, Town Clerk.

## CONTRACTS OPEN.

**ABERDEEN.**—March 23.—For Mason and Slater Work, Wrought-iron Roofs, &c., at Retort House and Coal Stores, Corporation Gasworks.

**ABERGWILL.**—March 24.—For Alterations and Additions to Vicarage. Mr. H. Prothero, Architect, Cheltenham.

**ABERSYCHAN.**—March 14.—For Building Pumping Engine House at Pits. The Ebbw Vale Street Iron and Coal Company, Ebbw Vale.

**ASHTON-UNDER-LYNE.**—For Building School. Mr. J. H. Burton, Architect, Warrington Street, Ashton-under-Lyne.

**ASHTON-UNDER-LYNE.**—March 16.—For Building Public-house. Messrs. T. D. & J. Lindley, Architects, Ashton-under-Lyne.

**ASHTON-UNDER-LYNE.**—March 16.—For Building Fireproof Works in Extension of the Ashton Reporter Offices. Messrs. T. D. & J. Lindley, Architects, Ashton-under-Lyne.

**ASHTON-UNDER-LYNE.**—March 16.—For Cast and Wrought-iron Beams, Joists, and Columns for Extension of Offices. Messrs. T. D. & J. Lindley, Architects, Ashton-under-Lyne.

**ASTON MANOR, BIRMINGHAM.**—March 14.—For Erection of Boundary Wall and Piers at Upper Witton Hospital. Mr. W. Augustus Davies, Surveyor Public Buildings, Aston Manor.

**ATHERSTONE.**—March 25.—For Construction of Brick Gasholder Tank. Mr. W. A. Hutton, Secretary to the Gaslight and Coke Company, Atherstone.

**BARROW-IN-FURNESS.**—March 20.—For Supplying Telescope Fire Escape. The Town Clerk, Barrow-in-Furness.

**BECKERMET.**—March 16.—For Building Warehouse, Stables, &c. Mr. J. Hartley, Beckermet.

**BELFAST.**—March 14.—For Widening Queen's Bridge. Mr. J. C. Bretland, Borough Surveyor, Town Hall, Belfast.

**BELFAST.**—March 30.—For Construction of Graving Dock, Entrance Basin, and other Works, on East Side of Victoria Channel. Mr. F. R. Salmond, Harbour Engineer, Belfast.

**BEXHILL.**—March 31.—For Enlargement and part Rebuilding Church of St. Mark. Rev. J. H. Simpson, Rector, St. Mark's, Bexhill.

**BIDEFORD.**—March 24.—For Extensions to the Ladies' College at Edge Hill. Mr. J. Crocker, Architect, Queen Street, Exeter.

**BRADFORD.**—March 17.—For Building Caretaker's House at the Refuse Destructor Works. Mr. J. H. Cox, Borough Surveyor, Town Hall, Bradford.

**BRIDGEND.**—March 25.—For Building Church at Nolton. Mr. J. Prichard, Diocesan Architect, Llandaff.

**BROCKLEY RISE.**—March 16.—For Building and Maintenance of Station Offices, Waiting-rooms, Gallery, and Footbridge. The Chief Engineer, London Bridge Terminus, S.E.

**BURY.**—March 24.—For Supply of Cast-iron Sewer Grids, Manhole Covers, &c. Mr. J. Cartwright, C.E., Borough Surveyor, Bury.

**CASTLETON.**—For Building Seven Houses at Trub Smithy. Messrs. S. Butterworth & Duncan, Architects, 4 South Parade, Rochdale.

**CLEVEDON.**—March 14.—For Construction of certain Sewerage Works. Mr. H. C. Fry, Clerk to the Local Board, Clevedon.

**COXLIDGE, NEAR NEWCASTLE-ON-TYNE.**—March 24.—For the Erection of Two Additional Wings, each for about 75 patients, together with Enclosure Walls, and Alterations to the City Lunatic Asylum. Mr. Arthur B. Plummer, Architect, 46 Cloth Market, Newcastle-on-Tyne.

**DARENTH.**—March 23.—For Erection of Two Bakers' Ovens at the Asylum. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**DEWSBURY.**—March 18.—For Erection of Wrought-iron Shed Roof. Mr. Henry Holtom, Architect, Bond Street, Dewsbury.

**DROMORE.**—April 1.—For Building Town Hall and Market Enclosure. Mr. J. B. McConnell, Town Clerk, Dromore, co. Down.

**EAGLESFIELD.**—March 14.—For Building Two Detached Cottages. Mr. J. Fox, Eaglesfield.

**ELGIN.**—March 14.—For Additions to Farmsteadings on Wester Elchies Estates. Messrs. M'Bay & Gordon, Surveyors, Elgin.

**ELGIN.**—March 25.—For Building Shops and Dwelling-house in South Street. Messrs. A. & W. Reid, Architects, Elgin.

**ELTON.**—March 14.—For Building Seventeen Houses, Tottenham Road. Mr. D. Hardman, Architect, Elton, Bury.

**ELTON.**—March 23.—For Building Dwelling-house for Caretaker of Recreation Ground. Mr. J. Cartwright, C.E., Borough Surveyor, Bury.

**FAENHAM.**—March 23.—For Construction and Maintenance of Main Sewers (5 miles), with Manholes, Lampholes, Flushing-tanks, Stores



Reservoirs, Engine and Boiler House, Pumping Main, and Preparation of Land for Filtration, &c. Mr. James Lemon, C.E., Engineer, 62 and 63 Palace Chambers, Westminster, S.W.

FOLKESTONE.—March 18.—For Building Post-office. The Postmaster, Folkestone.

GAYWOOD.—March 14.—For Building Pair of Semi-detached Villas. Mr. E. J. Colman, Architect, Market Place, Lynn.

GLOUCESTER.—March 25.—For Works in connection with Parish Church, Oldbury-on-Severn. Messrs. Waller, Son & Wood, Architects. Tenders to be addressed to Rev. G. Fox, Rector.

GUILDFORD.—March 23.—For Constructing Reservoir at the Telegraph Field. Mr. Smallpiece, Clerk to the Urban Sanitary Authority, Guildford.

HALFAX.—March 15.—For Erection of Beer-house, House, and Shop at Luddenden Foot. Messrs. Jackson & Fox, Architects.

HAMMERSMITH.—March 19.—For Alteration and Extension of Drainage Arrangements at the Fulham Union Workhouse. Mr. T. A. Marsh, Clerk to the Guardians, Fulham Palace Road, Hammersmith.

HANDSWORTH.—March 17.—For Construction of Sewers, with Manholes, Bellmouths, Storm Overflow, Pipe Sewers, &c. Mr. E. Kenworth, Local Board Offices, Soho Road, Handsworth, Birmingham.

HANLEY.—March 17.—For Alteration of Premises in Miles Bank. Mr. G. W. Bradford, Architect, Hanley.

HINDLEY.—March 16.—For Supplying Fire-clay Gas Retorts—Brick and Clay—for twelve months. Mr. Dickinson, Manager of the Gas-works, Hindley.

HOLLINWOOD.—March 17.—For Supplying and Erecting Four Purifiers, 20 feet square, with 20-inch Centre Valve and Connection, and Four Scrubbers, 30 feet high and 8 feet diameter, with Spiral Staircase. Mr. H. Andrew, Gas and Water Offices, Oldham.

INDIA OFFICE.—March 17.—For Supply of Plate and Bar Iron. The Director-General of Stores, India Office, Westminster, S.W.

INNERLEITHEN.—March 14.—For Shop Fittings for new Buildings for the Innerleithen Co-operative Society. Plans with the Secretary, Innerleithen.

INVERURIE.—March 14.—For Building Hall in connection with the Parish Church. Mr. J. W. Watson, Market Place, Inverurie.

LEEDS.—March 14.—For Alterations and Additions to Public-house and Brew-house. Mr. James Charles, Architect, 14 Butt's Court, Albion Street, Leeds.

LEEDS.—March 16.—For Erection of Caretakers' Houses, Hunslet Carr and Hunslet Low Road Board Schools. Mr. R. L. Adams, Architect. Mr. W. Lee, Clerk to the Board.

LEEDS.—March 18.—For Supply of Fireclay Retorts, Firebricks, Lumps, and Fireclay. The Engineer, Gas Works, Meadow Lane, Leeds.

LEICESTER.—March 25.—For Alterations and Additions to the Premises containing the Roman Pavement, situate at the angle of Jewry-wall Street and Friars' Causeway, and for other Works in connection therewith. Mr. Gordon, C.E., Borough Surveyor, Town Hall, Leicester.

LITTLE HARWOOD.—March 14.—For Building Schools. Mr. F. J. Robinson, Architect, 45 Friar Gate, Derby.

LONDON.—March 24.—For Construction of Brick Sewers (400 feet) and Pipe Sewer (90 feet), St. Giles's District. Mr. Henry C. Jones, Clerk to the District Board of Works, 197 High Holborn, W.C.

LONDON COLNEY.—March 16.—For Re-building White Lion Inn. Mr. T. Foster Woodman, Chequer Street, St. Albans.

LONDONDERRY.—March 16.—For Construction of the Creggan Extension Waterworks. Mr. L. L. Macassey, C.E., Lombard Street, Belfast.

MALTON.—March 14.—For Refitting Rilling-ton Church. Mr. C. Hodgson Fowler, Architect, The College, Durham.

MARKET HARBOUROUGH.—For Extensive Alterations and Additions to the Corset Factory. Messrs. R. & W. H. Symington & Co., Market Harborough.

MARYPORT.—March 21.—For Erection of Sea Wall from King Street to the Tanyard. Mr. Stokoe, Surveyor. Mr. F. Kelly, Clerk to Trustees.

MARYPORT.—March 30.—For Construction of System of Outfall and Main Sewers. Mr. H. U. McKie, C.E., 7 George Street, Carlisle.

MENAI BRIDGE.—March 20.—For Enlargement of Residence, "Brynteg." Mr. Richard Davies, Architect, Bangor.

NEWCASTLE-ON-TYNE.—March 18.—For Building Temporary Wards in connection with the Infirmary. Messrs. Lamb & Armstrong, Architects, 38 Grainger Street West, Newcastle-on-Tyne.

NOTTINGHAM.—For Building Additional School Premises, at Stockholme. Mr. A. N. Bromley, Architect, Weekday Cross, Nottingham.

PLYMOUTH.—March 17.—For Construction of Pipe-sewer with Stoneware Pipes from Old Town Street to Treville Street. Mr. G. D. Bellamy, Borough Engineer, Municipal Offices, Plymouth.

PORTH.—March 17.—For Building English Congregational Church. Mr. B. Morris, 2 Junction Terrace, Porth, Pontypridd.

PRESTWICH.—March 19.—For Construction of Main Sewer (1,385 yards) and Excavating and Levelling part of Road. Mr. A. W. Grundy, Clerk to the Local Board, Chester Bank, Prestwich.

ROCHESTER.—March 24.—For Alterations and Repairs to Corn Exchange. The City Surveyor, Guildhall, Rochester.

ROTHERHAM.—March 21.—For Making and Delivering 12 Hydraulic Valves, 20 Tees, 4 Flange and Spigot Pipes, 18 Lengths of Gas Mains, Bolts, Nuts, and Washers for the Gas Committee. Mr. S. Brown, Town Clerk, Rotherham.

ROWLEY REGIS.—March 21.—For Building Board School for 400 Children at Spinner's End Cradley Heath. Mr. J. T. Meredith, Architect Bank Buildings, Kidderminster.

# R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,

INVENTOR and PATENTEE of the

## SAFETY WINDOW WITH REVERSIBLE SASHES

FOR

### INEXPENSIVE & PERPETUAL CLEANLINESS

Which has gained at the INTERNATIONAL HEALTH and  
SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
and 16 Diplomas of Merit.

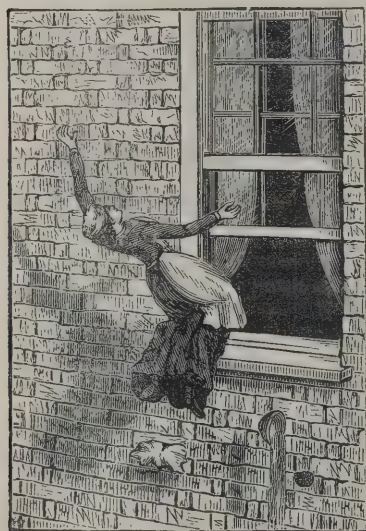
The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—

|  |   |
|--|---|
| Barnstaple   | Hanau K, Pilton Street.                   |
| Belfast and 10 miles round   | W. J. Watson, Royal Avenue, Belfast.      |
| Bournemouth and 10 miles round   | H. W. Jenkins & Son, Builders.            |
| Brighton and 8 miles round   | Cheesman & Co., Kensington Street.        |
| Bristol and 20 miles round, and Gloucestershire, Somerset, Dorset, Wilts, Mon., Glamorganshire | Brock & Bruce, Albert Road, St. Philip's. |
| Dublin and 20 miles round  | J. & W. Beckett, 28 South King Street.    |
| Dundee and 30 miles round  | Stewart Robertson, 34 Bank Street.        |
| Edinburgh  |   |
| Exeter and 20 miles round  | W. R. Commings, 45 Longbrook Street.      |
| Glasgow and 30 miles round   | Baird, Thompson & Co., 24 Bath Street.    |
| Gloucester and Cheltenham  | The Sanitary and Economic Association.    |

|                                  |  |
|----------------------------------|--|
| Hastings                         | Taylor Bros., Builders.                                      |
| Hereford and 5 miles round       | C. Lawrence, 41 Portland Street.                             |
| Ilfracombe                       | W. Jones, 4 Osborne Road.                                    |
| Leeds and 5 miles round          | John Wm. Lewes, 65 Albion Street.                            |
| Liverpool                        | Evan Griffiths & George Finning, Sefton Works, Miles Street. |
| Ludlow and Leominster            | J. Grosvenor, Ludlow.  |
| Newton Abbott and 10 miles round | Parker Bros., Courtney Street.                               |
| Nottingham and 15 miles round    | Henry Vickers, Welford Road.                                 |
| Reading and 5 miles round        |  |
| Southampton and 7 miles round    | Driver & Co., St. Mary Saw Mills, Southampton.               |
| Sunderland and 10 miles round    |  |
| Torquay and 5 miles round        | C. & W. Watson, Union Street.                                |





**ROWLEY REGIS.**—March 21.—For Enlarging Board School at Tivdale for Seventy Boys and Sixty Girls. Mr. J. T. Meredith, Architect, Bank Buildings, Kidderminster.

**SAXBY.**—March 30.—For Construction of Wrought-iron Bridge over the River Ancholme. Mr. A. Atkinson, Engineer to the Commissioners of the Ancholme Drainage and Navigation, Brigg.

**SHEFFIELD.**—March 14.—For Building Wesleyan Schools and School Chapel at Millhouses. Mr. John D. Webster, Architect, 21 Church Street, Sheffield.

**SILVERDALE.**—March 16.—For Building School and Class-rooms for 250 Infants. Mr. G. B. Ford, Architect, Burslem.

**SILVERTOWN.**—March 24.—For Construction of Sewage Outfall Works. Mr. Lewis Angell, C.E., Town Hall, Stratford, E.

**SOWERBY BRIDGE.**—March 14.—For Erection of a Wrought-iron Lattice Foot-bridge (86 feet span). Mr. Henry Whitlow, Surveyor, Sowerby Bridge.

**STAFFORD.**—March 30.—For Construction of Two Purifiers, 20 by 25 feet; Two Overhead Lattice Girders, 57 feet 3 inches long and 3 feet 9 inches deep; and Four Cast-iron Columns. Mr. J. F. Beel, Gas Engineer, Stafford.

**STAINFORTH.**—March 14.—For Building Cemetery Chapel, Lodge, and Boundary Walls, with Gates and Iron Fencing, and Laying Out Roads and Paths. Mr. Edwin Dolby, Architect, 31 Parkville Road, Fulham, S.W.

**STOCKPORT.**—March 20.—For Construction of Public Baths. Mr. A. M. Fowler, Borough Surveyor, St. Petersgate, Stockport.

**ST. OSYTH.**—March 24.—For Construction of Works of Sewerage and Sewage Disposal. Mr. G. H. Sasse, Surveyor, Thorpe-le-Soken, near Colchester.

**STRANGFORD.**—March 17.—For Building Four Dwelling-houses, for Lord de Ros. Mr. G. E. Bowen, Estate Office, Strangford, co. Down.

**STRATHDEARN.**—March 16.—For Building House, Kyllachy Estate. Mr. W. L. Carruthers, Architect, Bank Street, Inverness.

**SUNDERLAND.**—March 21.—For an Underground Hauling Engine. Mr. C. E. Barrett, Seaham Colliery, Sunderland. And for Winding Engine. Mr. F. S. Pantou, Silksworth Colliery, Sunderland.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**TEIGNMOUTH.**—March 14.—For Well Sinking, Steam Machinery, Buildings, and Reservoir Maos (3 miles), Hydrants, and Sluice Valves. Mr. G. Crow, Surveyor to the Local Board, Teignmouth.

**TONBRIDGE.**—March 27.—For Building Infirmary at the Union Workhouse. Messrs. H. H. & E. Cronk, Architects, Mount Ephraim Road, Tunbridge Wells.

**TUNSTALL.**—March 16.—For Building Schools for 300 Children, with Caretaker's House. Mr. G. B. Ford, Architect, Burslem.

**WAKEFIELD.**—March 19.—For Rebuilding St. Michael's Vicarage. Mr. W. Watson, Architect, Barstow Square, Wakefield.

**WAKEFIELD.**—March 31.—For Erection of a Pauper Lunatic Asylum at Menston, Otley, for 850 inmates. Mr. J. Vickers Edwards, West Riding Surveyor, Architect, Wakefield. Mr. W. L. Williams, Clerk to Committee of Justices, Wakefield.

**WALTON-LE-DALE.**—March 26.—For Making Headings (250 yards) from Wells at Pumping Station. Mr. W. Wrennall, C.E., 35A Castle Street, Liverpool.

**WOODLEAZE.**—March 30.—For Building Dwelling-house and Offices. Mr. W. J. Fletcher, Architect, Wimborne.

**WORTHING.**—March 18.—For Construction of Storage Tank and Ejector Station. Messrs. Shone & Ault, C.E., Wrexham and London.

**WREXHAM.**—March 18.—For Building Hospital for Infectious Diseases (Administrative Department, two Pavilions, Isolation Wards, &c.) Mr. A. C. Baugh, C.E., Egerton Street, Wrexham.

**WORKINGTON.**—March 25.—For Building Two Shops. Mr. J. Howes, Architect, Bridge Street, Workington.

## TENDERS.

### ABINGDON.

For Supplying Pair of Lock Gates, Abingdon. Messrs. LIDDONS & SONS, Surveyors, Oundle.  
Binder & Sons . . . . . £73 15 0  
Sharman . . . . . 73 0 0

### BEDFORD.

For Revolving Divisions and Self-sustaining Dinner-lift for new Liberal Club, Bedford.  
ATTWOOD & Co. (late Salmon, Barnes & Co.), Ulverston (accepted).  
For Dinner lift for Town and County Club, Bedford.  
ATTWOOD & Co. (late Salmon, Barnes & Co.), Ulverston (accepted).

### BIRKENHEAD.

For Sewering, Making, and Completing Conway Place, Birkenhead. Mr. T. C. THORBURN, Borough Surveyor.  
Winks, Tranmere . . . . . £141 8 9  
Chadwick & Son, Liverpool . . . . . 125 6 0  
Gass, Birkenhead . . . . . 115 3 0  
Riddell, Tranmere . . . . . 112 11 5  
JONES, Birkenhead (accepted) . . . . . 93 7 1  
Speight, Liverpool . . . . . 92 0 0

For Pulling Down and Rebuilding Brick and Stone Boundary Walling (340 yards) at Workhouse, Tranmere, Birkenhead. Mr. THOMAS C. THORBURN, C.E., Borough Surveyor, Architect. Quantities by the Architect.

Munnerley . . . . . £500 0 0  
Riddell . . . . . 498 19 5  
Legge & Son . . . . . 484 0 0  
Fawkes Bros. . . . . 438 7 7  
Snape . . . . . 397 10 0  
Winks . . . . . 355 18 5  
Speight . . . . . 319 0 0  
THOMAS (accepted) . . . . . 288 0 0

# RENDLES ACME GLAZING

Patentees:—**W. E. RENDLE & CO.,**  
3 WESTMINSTER CHAMBERS, VICTORIA STREET, LONDON.

## VENETIAN ENAMEL MOSAIC FOR MURAL DECORATION.

Mosaic Works conducted on the same principle as in Venice and Rome by

**A. CAPPELLO,**  
472 KING'S ROAD, CHELSEA, LONDON, S.W.  
Established in 1880.  
15 YEARS IN ENGLAND WITH DR. SALVIATI.

The above Factory is established in London for the purpose of making the Venetian Enamel Mosaic Work an English trade, and to reduce the cost to half the price that has been hitherto charged abroad or by the London agents.

See "Building News," Oct. 12, 1883, in reference to the Mosaic Pictures for the new Church of the Brompton Oratory, executed by this Establishment.

Gold Enamel Mosaic Work at 15s. per sq. ft.  
Venetian Enamel Mosaic Figure Work at 20s. per sq. ft., including expenses of Fixing.

## MOSAIC PAVEMENTS.

### SURPLUS STOCK.

A Large Quantity of

**PORTLAND SAWN SLABS,**  
Varying from 2" to 8" in thickness,  
TO SELL CHEAP. Must be Cleared immediately.

**STEWARDS & CO., Limited,**  
GROSVENOR ROAD, PIMLICO, S.W.  
R. N. CRABTREE, Manager.

## SALES BY AUCTION.

**FOY, MORGAN & CO.** beg to announce that their Next PUBLIC AUCTION will take place on  
WEDNESDAY, APRIL 1, 1885.

at the BALTIC SALE-ROOM, Threadneedle Street, E.C., when they will offer their usual assortment of DEALS, BATTENS, BOARDS, TIMBER, &c.  
Catalogues will be issued in due time.

**FOY, MORGAN & CO.** {Wood Brokers, 108 Bishopsgate Street Within, E.C.

To be SOLD by PUBLIC AUCTION, pursuant to an Order of the High Court of Justice, Chancery Division, made in an Action Re Van Hagen's Estate, "Spurling v. Rochfort," 1877, V. 53, with the approbation of the Honourable Mr. Justice Pearson, by

**JOHN WHITTAKER ELLIS** (the person appointed by the said Judge), at the Auction Mart, Tokenhouse Yard, in the City of London, on Tuesday, the 17th day of March, 1885, at Two o'clock in the afternoon, in One Lot, the FREEHOLD ESTATE, situate on the west side of the High Road leading from Woolwich to Dartford, in the parish of Bexley, in the county of Kent, known as the Eight Acres, Thomas Lands, Little Brampton Field, Great Brampton Field, Ten-acre Field, and Long-lane Field, containing altogether 72a. 2r. 27p., or thereabouts.

The lands are at present let for market garden purposes, and are in the occupation of Francis Trowell, Esq., as yearly tenant, at the rent of £120 per annum.

Particulars and conditions of sale may be had gratis of Messrs. Rickards & Sons, Solicitors, 2 Crown Court, Old Broad Street, London, E.C.; Messrs. Dixon, Ward, & Co., Solicitors, 10 Bedford Row, London, W.C.; and of the Auctioneer, 29 Fleet Street, and is Old Broad Street, London, E.C.; at the Auction Mart, E.C.; the Bull and Victoria and Bull's Head Hotels, Dartford; Upton Hotel, Bexley Heath; and White Hart Hotel, Bromley. Dated this 6th day of February, 1885.

Rickards & Sons, 2 Crown Court, Old Broad Street, E.C., Solicitors.

## CITY OF LONDON.

St. Paul's School, and 35 St. Paul's Churchyard.  
**MESSES. DANIEL SMITH, SON & OAKLEY** have received instructions from the Worshipful Company of Mercers to LET by AUCTION, at the Auction Mart, Tokenhouse Yard, LONDON, E.C., on Tuesday, March 21, 1885, in one Lot, on lease for a term of 42 years, the very important, substantial, and extensive premises at the east end of St. Paul's Churchyard, which have been for so many years occupied by St. Paul's School, together with the adjoining corner house, No. 35 St. Paul's Churchyard. These premises occupy a position which is almost unrivalled in the City of London, having extensive frontages to St. Paul's Churchyard and Old Change, and also a frontage to Watling Street, and having the great advantage of first-rate light, especially on the Churchyard side.  
The premises occupied by the School and the Masters' houses are extremely strongly and well built, with a fine Classic façade in stone.

The premises are well adapted for any Public Institution requiring a prominent situation and a large building. They are capable of conversion and alteration for commercial purposes, and with the addition of the corner House, No. 35, form such a block of premises as is seldom to be met with in the heart of the City.

The total area is about 10,000 square feet.  
Full particulars, with plans of the premises, may be obtained on application to John Watney, Esq., at the Clerk's Office, Mercers' Hall, Ironmonger Lane, E.C.; of George Barnes Williams, Surveyor to the Company, Mercers' Hall; at the Auction Mart; and of the Auctioneers, 10 Waterloo Place, Pall Mall, S.W.

On Tuesday and Wednesday next.  
Stock-in-Trade of a Looking-glass Manufacturer, Two Horses, Two Vans, superior Office Furniture, including an excellent Cylinder Writing-table, a Two-door Iron Repository, an Iron Safe, Fittings, &c.

**MURRELL & SCOBELL** will SELL, on the premises 65 Mansell Street, Goodman's Field, on Tuesday and Wednesday next, commencing at One o'clock punctually each day, the STOCK of PLATE-GLASS, all foreign, and principally French, comprising 32,520 feet of unsilvered, plain and bevelled, 1500 dozen small sizes, chimney and console glasses and tables, carved and compo frames in the white and gilt, over-mantels, a large mahogany and gilt glass cabinet, mahogany and pine-boards, curl-veneers, work-benches, and numerous effects.

May be viewed two days prior to the Sale.  
Catalogues may be had of Messrs. G. C. Warden & Co., Glass Factors, 14 Queen Street, Cheapside; on the Premises; and of the Auctioneers, 1 Walbrook (opposite the Mansion House).  
Note.—Approved bills will be taken.



**BRADFORD.**

For Darkening Blind for Eye and Ear Hospital  
Operating Room, Bradford.

ATTWOOD & Co. (late Salmon, Barnes & Co.),  
Ulverston (accepted).

For Revolving Shutters for new Co-operative  
Stores, Hoyland Common.

ATTWOOD & Co. (late Salmon, Barnes & Co.),  
Ulverston (accepted).

**BURY.**

For Supply of Iron Palisades and Gates. Mr.  
J. CARTWRIGHT, C.E., Borough Surveyor,  
Bury.

St. Pancras Ironwork Co., Lon-

don . . . . . £1,075 0 0

Hodkinson, Coventry . . . . . 925 6 8

Hill, Bury . . . . . 760 0 0

Howley, Manchester . . . . . 690 13 4

Simpson & Wood, Darlaston . . . . . 666 4 4

Hill & Smith, Brierly Hill . . . . . 641 15 7

Redings, Bury . . . . . 643 6 8

Downham, Bury . . . . . 610 0 0

Ashworth, Burnley . . . . . 550 0 0

Bradbury & Sons, Helmshore . . . . . 550 0 0

Parr, Swinton . . . . . 510 0 0

E. C. & J. Keay, Birmingham . . . . . 485 6 8

Oddie, Bury . . . . . 457 0 0

**CHISWICK.**

For Sewering and Making-up Arlington Park  
Gardens, North and South, for the Chiswick  
Local Board. Mr. A. RAMSDEN, Surveyor.

Hare . . . . . £1,015 0 0

Green & Burleigh . . . . . 960 0 0

Ball, Chiswick . . . . . 893 11 7

Trehearne, Clapham . . . . . 825 0 0

Mowlem & Burt, Westminster . . . . . 784 0 0

Coat, Bridge Road . . . . . 781 0 0

Tomes & Wimpey, Hammersmith . . . . . 776 0 0

Aldred, Chiswick . . . . . 768 0 0

Nowell & Robson, Kensington . . . . . 759 0 0

Rutty, Bromley-by-Bow . . . . . 733 0 0

MEARS, Hammersmith (ac-  
cepted) . . . . . 703 0 0

**RODLEY.**

For Revolving Shutters for Boiler-house, New  
Foundry, Rodley, Yorkshire.

ATTWOOD & Co. (late Salmon, Barnes & Co.),  
Ulverston (accepted).

**COLCHESTER.**

For Alterations to Business Premises in Wyre  
Street, for Mr. H. Branch. Mr. J. W.  
START, Architect, Colchester.

*Estimate No. 1.*

Diss . . . . . £101 0 0

Start . . . . . 89 14 0

Ambrose . . . . . 89 10 0

BOWLES (accepted) . . . . . 85 17 6

All of Colchester.

**CROYDON.**

For Alterations and Additions to the Friends'  
Meeting House, Croydon. Mr. W. C. Reed,  
A.R.I.B.A., Architect, 1 Adelaide Place,  
London Bridge.

Bex . . . . . £1,957 0 0

Marriage . . . . . 1,450 0 0

Smith & Son . . . . . 1,417 0 0

Legg . . . . . 1,350 0 0

**DARLASTON.**

For Construction of Sewer Works.

LAW, Kidderminster (accepted) £13,991 0 0

**ELTON.**

For the Stonework in Connection with Proposed  
Recreation Ground at Elton. Mr. J. CART-  
WRIGHT, Borough Surveyor, Bury.

Lewis & Son, Barrow-in-Furness . £726 14 9

Newhouse & Wrigley, Bury . . . . . 668 7 0

Waterhouse, Bury . . . . . 645 17 2

Byrom, Bury . . . . . 625 7 6

Hill & Brother, Bury . . . . . 588 3 2

F. & C. Hill, Bury . . . . . 573 11 4

HALL, Bury (accepted) . . . . . 531 9 0

**DUDLEY.**

For Works on North-east Side of Hall Street.  
Mr. J. GAMMAGE, Borough Surveyor,  
Dudley.

Davies, Dudley . . . . . £194 5 0

BERRY,\* Dudley (accepted) . . . . . 182 0 0

Owens, Wolverhampton . . . . . 177 0 0

Bennett & Bate, Bilston . . . . . 176 16 3

Jeavons, Dudley . . . . . 165 0 0

Surveyor's estimate . . . . . 175 0 0

\* With Partridge & Guest's Bricks.

**DUDLEY—continued.**

For Paving Approaches to Town (Tipton,  
Birmingham, and Netherton Road) with  
Blue Chequered Bricks and Limestone  
Marginal Lines. Mr. J. GAMMAGE, Borough  
Surveyor, Dudley.

Hughes, Gornal . . . . . £1,402 0 0

Curral & Lewis, Birmingham . . . . . 1,312 0 0

Bates, Bilston . . . . . 1,231 0 0

Bennell, Bilston . . . . . 1,222 0 0

Owen, Wolverhampton . . . . . 1,184 0 0

Jeavons, Dudley . . . . . 1,166 0 0

Berry, Dudley . . . . . 1,156 0 0

Biggs, Handsworth . . . . . 1,050 0 0

Surveyor's estimate . . . . . 1,260 0 0

*Accepted Tenders.*

Jeavons (Netherton Road) . . . . . 449 2 6

Berry (Tipton Road) . . . . . 319 6 8

Biggs (Birmingham Road) . . . . . 260 0 0

**DURHAM.**

For Construction of 590 yards of 8-inch and  
9-inch Pipe Sewers, at Low Pittington, and  
467 yards of 9-inch Pipe Sewer at Neville's  
Cross, for the Rural Sanitary Authority.  
Mr. G. GREGSON, Surveyor to the Autho-  
rity, 1 Sutton Street, Durham.

*Low Pittington.*

Langton & Co., Dipton . . . . . £108 5 9

Dixon, Fence Houses . . . . . 106 10 0

Ainsley, Castle Chare . . . . . 106 0 0

Nicholson, Sherburn . . . . . 106 0 0

Forster, Spennymoor . . . . . 105 0 0

Carriock, Durham . . . . . 97 18 0

STOKOE, Fence Houses (accepted) . . . . . 89 2 6

Pallister, Stonebridge . . . . . 70 0 0

*Neville's Cross.*

Dixon, Fence Houses . . . . . 74 13 0

Ainsley, Castle Chare . . . . . 74 0 0

Langton & Co., Dipton . . . . . 72 13 6

Forster, Spennymoor . . . . . 71 6 0

Stokoe, Fence Houses . . . . . 66 5 0

Carriock, Durham . . . . . 65 10 0

PALLISTER, Stonebridge (ac-  
cepted) . . . . . 60 0 0

Surveyor's estimate . £102 17s. 2d. and  
£76 13s. 8d.

A BUSINESS MEETING of the ROYAL  
INSTITUTE OF BRITISH ARCHITECTS will be held  
on Monday, the 16th instant, at Eight P.M., when a Ballot for  
New Members will take place, for particulars of which see the  
Journal of Proceedings issued on the 5th instant to Members and  
Correspondents. The other business consists of (1) presentation  
of SILVER MEDALS to the Travelling Students, commemora-  
tive of their having held the Studentship founded in honour of  
Fugate; (2) presentation of SILVER MEDALS to the Holders of  
the Bursary founded by George Godwin, F.R.S.; Royal Gold  
Medallist; (3) motion to address the proper authorities with a  
view to the preservation of YORK WATER-GATE, TEMPLE  
BAR, and the Entrance Doorway and Colonnade of OLD  
BURLINGTON HOUSE; (4) the Associates' Memorial.

J. MACVICAR ANDERSON, Hon. Secretary.

WILLIAM H. WHITE, Secretary.

Royal Institute of British Architects, 9 Conduit Street,  
Hanover Square, London, W.

ARCHITECTURAL ASSOCIATION,  
9 CONDUIT STREET, W.

The Twelfth Ordinary Meeting will be held on Friday Evening  
next, March 20, commencing at 7.30, when a Paper will be read by  
L. L. PENROSE, Esq., M.A., on "Proportion in Architecture,  
especially as Exemplified in the Works of the Greeks."

W. H. ATKIN BERRY, } Hon. Secs.  
HERBERT D. APPLETON, }

TO  
ARCHITECTS, BUILDERS,  
AND  
CONTRACTORS.

STEEL CUT NAILS!!

The modern and important discovery in the process of making  
Steel has so reduced the price, that Steel Cut Nails of the well-  
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Nails.

The Steel Cut Nails are far superior in quality and more uni-  
form in size than any wrought or hand-made Nails yet pro-  
duced, and being lighter in weight than ordinary Iron Cut Nails  
and free from rust, they are found cheaper in actual use than  
common Iron Cut Nails at 1s. 6d. p. cwt. less.

These Steel Cut Nails are specially suited for Builders, Joiners,  
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OVAL WIRE NAILS.

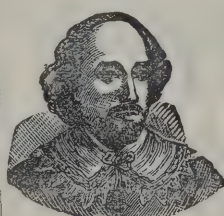
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READING CASES FOR THE ARCHITECT.  
Price Two Shillings.

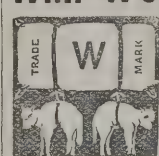
Office: 175 Strand, London, W.C.

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ARTISTIC WALL  
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PATENT EMBOSSED  
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Dado Decorations, Embossed Leathers, Raised Flocks.

No Travellers Employed.

SOLE ADDRESS—110 HIGH STREET, near

MANCHESTER SQUARE, LONDON, W.

Fourteen Medals, including Gold Medal, International Health  
Exhibition, 1884.

**ART FURNITURE.****KENDAL, MILNE & CO.,**

110 DEANS GATE, MANCHESTER,

Manufacturers of ARTISTIC FURNITURE  
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Estimates given at Wholesale Prices for Furniture  
made to Architects' Designs.

**"SANITAS"**

THE HOUSEHOLD DISINFECTANT.

Sanitary Institute Medal, Exhibition, 1882.  
Silver Prize Medal, National Health Society, 1883.  
Award, International Medical and Sanitary  
Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture  
Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH  
BODIES.

The Sanitas Co., Limited, Bethnal Green E.

**GRUNDY'S PATENT  
WARM-AIR  
VENTILATING FIRE GRATE.**

The novelty, superiority, and advantage of this patent  
consist in the heating surface being greater than any  
other Fire-grate introduced to the public. It is very  
simple in construction, and is made in the form of a Stove,  
the back of which is semicircular in shape, with gills  
behind and smoke-nozzle on top, all cast in one piece.  
The same can be attached to any design of a Register or  
Stove front. It is very suitable for schools, class-rooms,  
waiting-rooms, hospitals, offices, dormitories, and dwelling-  
houses, from the cottage to the mansion. Design and  
specification post free on application.

**TESTIMONIALS.**

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the  
efficiency of your patent Warm-Air Fire Grate. It has  
been very successful, and given every satisfaction where I  
have used it. Yours, &c.

"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard  
Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the  
excellency and efficiency of your patent Fire-Grate. It is  
the most charming invention for heating a large room I  
have ever known. I shall have pleasure in showing it to  
anyone who wish to have their schools or rooms pleasantly  
and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,

July 1884.

"DEAR SIR,—I have very great pleasure in stating that  
the first stove, or patent warm-air ventilating fire grate,  
adopted by me in school at Seaton, and a second in a  
Cocoa Palace, have given such satisfaction that I now  
order eleven to be inserted in New Upper Grade Schools in  
course of erection at West Hartlepool. They are the most  
economical, efficient, and easily managed stove at present  
before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington  
Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school  
is completely warmed by your new grate. It is the most  
economical and efficient that I have ever seen."

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure  
in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City  
Road, London.  
Works—TYLDESLEY, near MANCHESTER.



EDALE (DERBYSHIRE).

|  |        |      |
|--|--------|------|
| For Building Church at Edale, Derbyshire.                  |        |      |
| Mr. WILLIAM DAWES, Architect, 2 Gooper Street, Manchester. |        |      |
| Ingham, Glossop . . . . .                                  | £2,904 | 0 0  |
| Snell, Ma-borough . . . . .                                | 2,279  | 0 0  |
| Fearn & Savage, Sheffield                                  | 2,268  | 10 0 |
| Salt, Buxton . . . . .                                     | 2,200  | 0 0  |
| Hill & Son, Litton . . . . .                               | 2,128  | 6 4  |
| Rodley & Sons, Sheffield . . . . .                         | 1,996  | 0 0  |
| BECK, Matlock Bridge (accepted).                           | 1,860  | 0 0  |

FINCHLEY.

|  |         |      |
|--|---------|------|
| For Construction of Main Drainage Works, Finchley, for the Finchley Local Board. |         |      |
| Mr. GEO. W. BRUMELL, Engineer. Quantities by the Engineer.                       |         |      |
| Neave . . . . .  | £33,812 | 0 0  |
| Nowell & Robson . . . . .  | 30,853  | 0 0  |
| Mowlem & Co. . . . .   | 30,330  | 0 0  |
| Bottoms Bros . . . . .   | 29,809  | 0 0  |
| Pearson & Son . . . . .  | 27,990  | 0 0  |
| Kellet & Bentley . . . . .   | 27,350  | 0 0  |
| Bottrell . . . . .   | 26,897  | 0 0  |
| Peill . . . . .  | 26,666  | 0 0  |
| Godfrey . . . . .  | 26,160  | 18 0 |
| Pizey . . . . .  | 25,776  | 0 0  |
| Mears . . . . .  | 25,300  | 18 0 |
| Beadle . . . . .   | 24,978  | 0 0  |
| Dickson . . . . .  | 22,840  | 10 9 |
| Cooke & Co. . . . .  | 22,788  | 0 0  |
| Killingback . . . . .  | 22,327  | 0 0  |
| EVERETT (accepted) . . . . .   | 20,950  | 0 0  |
| Kill & Co. . . . .   | 19,301  | 0 0  |
| Kill & Co. (amended) . . . . .   | 21,301  | 0 0  |

FROME.

|   |        |      |
|---|--------|------|
| For Construction of Subsidence Tanks, &c., for the Frome Local Board. |        |      |
| Mr. PHILIP EDINGER, Engineer.   |        |      |
| F. & W. Long, Bradford-on-Avon . . . . .                              | £2,639 | 6 0  |
| Ambrose & Son, Bath . . . . .   | 2,297  | 18 6 |
| PICKTHALL & SON, Merthyr Tydfil (accepted) . . . . .                  | 2,251  | 17 6 |
| Engineer's estimate . . . . .   | 2,447  | 17 9 |

Machinery not let.

HEREFORD.

|  |        |      |
|--|--------|------|
| For Building Villa, St. Ethelbert Estate, Hereford, for Mr. F. Hathaway. |        |      |
| Mr. W. W. ROBINSON, Architect, 21 King Street, Hereford                  |        |      |
| Foster, Abergavenny . . . . .  | £1,095 | 0 0  |
| Powell, Hereford . . . . .   | 1,022  | 0 0  |
| Cullis, Hereford . . . . .   | 950    | 0 0  |
| Beavan & Hodges, Hereford . . . . .                                      | 896    | 10 0 |
| Rowberry, Hereford . . . . .   | 873    | 10 0 |
| Hiles, Hereford . . . . .  | 818    | 16 0 |
| Davies, Hereford . . . . .   | 812    | 0 0  |
| Bowers & Co., Hereford . . . . .   | 800    | 0 0  |
| Symonds, Hereford . . . . .  | 765    | 0 0  |
| Pritchard, Hereford . . . . .  | 761    | 12 6 |
| Ford, Hereford . . . . .   | 730    | 0 0  |
| Colley, Hereford (accepted) . . . . .                                    | 675    | 0 0  |

|  |        |      |
|--|--------|------|
| For Extension of Cattle Markets, Hereford.       |        |      |
| Mr. J. PARKER, City Surveyor.                    |        |      |
| Griffen Foundry Co., Birmingham                  | £1,075 | 0 0  |
| Culverwell & Co., Bridgwater . . . . .           | 1,070  | 0 0  |
| Halbard (executors), Burton-on-Trent . . . . .   | 869    | 0 0  |
| Naylor & Co., Hereford . . . . .                 | 849    | 0 0  |
| Harding, Hereford . . . . .                      | 803    | 0 0  |
| Smith & Co., Whitechurch . . . . .               | 799    | 16 5 |
| Hill & Smith, Brierly Hill . . . . .             | 760    | 0 0  |
| Perkins & Bellamy, Ross . . . . .                | 732    | 0 0  |
| Cullis, Hereford . . . . .                       | 730    | 0 0  |
| Butt & Co., Gloucester . . . . .                 | 715    | 0 0  |
| Matthews, Hereford . . . . .                     | 660    | 0 0  |
| E. C. & J. KEAY, Birmingham (accepted) . . . . . | 635    | 0 0  |

|  |        |      |
|--|--------|------|
| For Wrought and Cast Ironwork for Posts, Rails, and Gates, for Cattle and Sheep Pens and Entrance Gates at Cattle Markets, Hereford. |        |      |
| Mr. J. PARKER, City Surveyor.  |        |      |
| Cullis, Hereford . . . . .   | £1,300 | 0 0  |
| Taylor, Hereford . . . . .   | 1,230  | 0 0  |
| J. Davies, Hereford . . . . .  | 1,200  | 0 0  |
| Powell, Hereford . . . . .   | 1,071  | 0 0  |
| H. DAVIES, Hereford (accepted) . . . . .   | 849    | 10 0 |

Both Contracts.

|                            |       |     |
|----------------------------|-------|-----|
| Powell, Hereford . . . . . | 1,920 | 0 0 |
|----------------------------|-------|-----|

LINCOLN.

|  |      |       |
|--|------|-------|
| For Works of Road-making (800 feet long and 40 feet wide) on West Parade, from Rudgard's Lane to Gresham Street. |      |       |
| Mr. R. A. MACBRAIR, C.E., City Surveyor, Lincoln.  |      |       |
| Cowen & Lansdown . . . . .   | £775 | 3 1   |
| Rush & Shepherd . . . . .  | 757  | 3 10  |
| Hampshire . . . . .  | 643  | 2 6   |
| Cordon . . . . .   | 635  | 12 11 |
| H. S. & W. Close . . . . .   | 600  | 17 4  |
| Dawson . . . . .   | 569  | 7 2   |
| Bradley . . . . .  | 525  | 12 3  |
| J. & T. BINNS (accepted) . . . . .   | 523  | 12 8  |

LIVERPOOL.

|   |         |     |
|---|---------|-----|
| For the North Haymarket Extension, City of Liverpool. |         |     |
| M'Donald, Bootle . . . . .                            | £13,424 | 0 0 |
| Hughes & Stirling . . . . .                           | 12,250  | 0 0 |
| Miller, Edge Hill . . . . .                           | 12,130  | 0 0 |
| Leslie, Bootle . . . . .                              | 11,893  | 0 0 |
| Yates . . . . .                                       | 11,888  | 0 0 |
| W. & F. Witter . . . . .                              | 11,689  | 0 0 |
| Henshaw . . . . .                                     | 11,477  | 0 0 |
| Roberts . . . . .                                     | 11,399  | 0 0 |
| Tomkinson & Sons . . . . .                            | 11,370  | 0 0 |
| Morrison & Sons, Wavertree . . . . .                  | 11,140  | 0 0 |
| Tyson . . . . .                                       | 10,923  | 0 0 |
| Raffle & Campbell . . . . .                           | 10,895  | 0 0 |
| Urmson . . . . .                                      | 10,875  | 0 0 |
| Toul . . . . .  | 10,785  | 0 0 |
| Thornton & Sons . . . . .                             | 10,600  | 0 0 |
| Tomkinson & Co. . . . .                               | 10,432  | 0 0 |
| Dilworth, Wavertree . . . . .                         | 10,340  | 0 0 |
| Gabbutt . . . . .                                     | 10,299  | 0 0 |
| Brown & Backhouse . . . . .                           | 10,210  | 0 0 |

All the rest of Liverpool.

KIRKWALL (SCOTLAND).

|                                       |        |     |
|---------------------------------------|--------|-----|
| For Building Manse for Kirkwall.      |        |     |
| Mr. T. S. PEACE, Architect, Kirkwall. |        |     |
| Sinclair . . . . .                    | £1,940 | 0 0 |
| Park . . . . .                        | 1,929  | 0 0 |
| Firth . . . . .                       | 1,695  | 0 0 |
| BAIKIE & SONS (accepted) . . . . .    | 1,635  | 0 0 |

# THE "HARDING" VENTILATING COMPANY,

30 EAST PARADE, LEEDS.

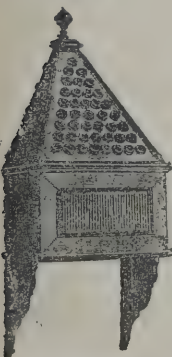
## HARDINGS' PATENT AIR DIFFUSER

FOR VENTILATING ALL KINDS OF BUILDINGS.

Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus, we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



Diffuser with Filter.

**CHURCH WALL VENTILATOR.**—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

**OUR PATENT EXTRACTOR** is the best in the Market, and is supplied at a very much lower price than any other.

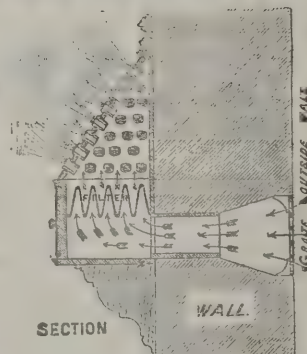
**CHURCH WINDOW VENTILATOR.**—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.

"Armley, Leeds, Oct. 29. 1883.  
"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.

A reduction in price is made where a number of Diffusers is required.

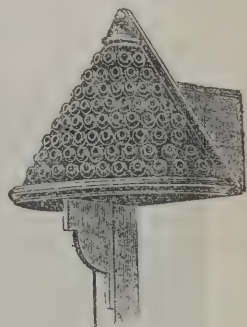
Estimates and further information given on application to the "HARDING" VENTILATING CO., 30 East Parade, Leeds.



SECTION



Air Extractor.





## LLANELLY.

For Two patent Self-sustaining Lifts for new Warehouse, Llanelly.  
ATTWOOD & Co. (late Salmon, Barnes & Co.), Ulverston (accepted).

## LONDON.

For Enlargement of Board School, Tottenham Road, Kingsland, with Pupil Teachers' School on Top. Mr. E. R. ROBSON, Architect.

|                  |         |   |   |
|------------------|---------|---|---|
| Goodman          | £12,993 | 0 | 0 |
| Pritchard & Son  | 12,986  | 0 | 0 |
| F. & F. J. Wood  | 12,859  | 0 | 0 |
| Oldrey           | 12,843  | 0 | 0 |
| Jerrard          | 12,765  | 0 | 0 |
| Downs            | 12,738  | 0 | 0 |
| Wall Bros.       | 12,675  | 0 | 0 |
| Grover & Son     | 12,489  | 0 | 0 |
| Steel Bros.      | 12,298  | 0 | 0 |
| Shurmur          | 12,267  | 0 | 0 |
| Williams & Son   | 12,244  | 0 | 0 |
| Hunt             | 12,036  | 0 | 0 |
| Harris & Wardrop | 11,937  | 0 | 0 |
| Wall             | 11,925  | 0 | 0 |
| Sargeant         | 11,847  | 0 | 0 |
| Boyce            | 11,820  | 0 | 0 |
| Palmer & Co.     | 11,791  | 0 | 0 |
| Howell & Son     | 11,733  | 0 | 0 |
| Cox              | 11,625  | 0 | 0 |
| Stimpson & Co.   | 11,570  | 0 | 0 |
| Atherton & Latta | 11,550  | 0 | 0 |
| Johnson          | 11,448  | 0 | 0 |

No tender to be accepted at present.

For Alterations to Licensed Victuallers' Schools, Kennington. Mr. F. T. FARTHING, Architect.

|                |      |   |   |
|----------------|------|---|---|
| Royal          | £396 | 0 | 0 |
| Bartlett       | 387  | 0 | 0 |
| Spencer & Co.  | 335  | 0 | 0 |
| Crabtree       | 327  | 0 | 0 |
| Cooper         | 321  | 0 | 0 |
| J. & J. Wilson | 320  | 0 | 0 |
| Shurmur        | 291  | 0 | 0 |

For Erection of New Bakery on the Berrymead Priory Estate, Acton, for Mr. H. W. Nevill. Mr. W. T. FARTHING, Architect.  
(WOODWARD accepted at a Schedule.)

## LONDON—continued.

For Erection of Six Blocks of Artisans' Dwellings in Seward Street, Goswell Road. Mr. M. N. INMAN, Architect.

|                |         |   |   |
|----------------|---------|---|---|
| Gibbs & Flew   | £41,325 | 0 | 0 |
| McGregor       | 38,033  | 0 | 0 |
| Chappell       | 35,606  | 0 | 0 |
| Boyce          | 35,427  | 0 | 0 |
| Stimpson & Co. | 35,134  | 0 | 0 |
| Morter         | 34,834  | 0 | 0 |
| Colls & Son    | 34,765  | 0 | 0 |
| Richardson     | 34,408  | 0 | 0 |
| Shurmur        | 34,247  | 0 | 0 |
| Grover & Son   | 33,373  | 0 | 0 |
| Brass & Son    | 33,242  | 0 | 0 |
| Lawrance & Son | 32,996  | 0 | 0 |

For Construction of Temporary Timber Foot-bridge, and Removal of existing Old Bridge across the River Thames at Battersea. Sir JOSEPH BAZALGETTE, Engineer.

|                            |         |   |   |
|----------------------------|---------|---|---|
| Kellett & Bentley          | £11,100 | 0 | 0 |
| Moss                       | 10,991  | 9 | 0 |
| Dixon                      | 10,485  | 0 | 0 |
| Pethrick Bros.             | 10,444  | 0 | 0 |
| W. H. R. Hill & Co.        | 9,999   | 0 | 0 |
| Avis & Co.                 | 9,930   | 0 | 0 |
| Hill & Co.                 | 9,677   | 0 | 0 |
| Cooke & Co.                | 8,861   | 0 | 0 |
| Ridley                     | 8,642   | 0 | 0 |
| Chaffin                    | 8,580   | 0 | 0 |
| Webster                    | 7,993   | 0 | 0 |
| Williams, Son & Wallington | 7,950   | 0 | 0 |
| Jackson                    | 7,896   | 4 | 3 |
| Godfrey                    | 7,500   | 0 | 0 |
| MOWLEM & Co. (accepted)    | 7,153   | 0 | 0 |

For a First-class Passenger Elevator of the Standard Hydraulic Type, to be Erected in the New Apartment House of Mr. W. H. Collbran, Cranley Mansions, Gloucester Road.

AMERICAN ELEVATOR CO., 38 Old Jewry, E.C. (accepted).

For Supplying and Fixing Patent Hot Water Heating Apparatus at 65 City Road. BACON & Co., London (accepted).

## LONDON—continued

For Foundation and Sub-basement, Eastcheap, E.C. Messrs. E. & E. B. ELLIS, Architects.

|                   |        |   |   |
|-------------------|--------|---|---|
| Higgs & Hill      | £2,157 | 0 | 0 |
| Ashby & Horner    | 1,990  | 0 | 0 |
| Shurmur           | 1,989  | 0 | 0 |
| J. & J. Greenwood | 1,973  | 0 | 0 |
| Colls & Sons      | 1,939  | 0 | 0 |
| Woodward          | 1,893  | 0 | 0 |
| Ashby Bros.       | 1,793  | 0 | 0 |
| J. & J. Chappell  | 1,746  | 0 | 0 |
| Nightingale       | 1,570  | 0 | 0 |

For the Erection of Stable Buildings, &c., in Surrey Square, S.E. Mr. W. C. REED, A.R.I.B.A., Architect, 1 Adelaide Place, London Bridge.

|             |      |   |   |
|-------------|------|---|---|
| Marriage    | £296 | 0 | 0 |
| Smith & Son | 215  | 0 | 0 |

For Heating by the Small Tube High Pressure Hot Water Heating Apparatus, the Havestock Mission House, Grafton Terrace, N.W.

BACON & Co., London (accepted).

For Pulling Down and Rebuilding No. 10 Duke Street, for the Most Worshipful the Butchers' Company. Mr. ALEXANDER PEEBLES, F.R.I.B.A., F.S.I., Architect. NIGHTINGALE (accepted upon a Schedule.)

In the list of tenders for Infirmary at Dulwich last week, Messrs. Croaker's tender should have been £76,970. Mr. Wall's tender was also misprinted £77,868 instead of £71,868.

## LYMINGTON.

For Revolving Shutters for Shop Premises, Lymington.

ATTWOOD & Co. (late Salmon, Barnes & Co.), Ulverston (accepted).

## MARGATE.

For Construction of Drainage Works, Margate. Dennes, Walmer

|                                   |        |   |   |
|-----------------------------------|--------|---|---|
| PARAMOR & SON, Margate (accepted) | £1,136 | 0 | 0 |
|                                   | 1,090  | 0 | 0 |

## ARTISTIC VENTILATION.



## SHARP &amp; CO., Hygienic and Hydraulic Engineers.

## TESTIMONIAL

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

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**MALTON.**

For Building Two Houses at West Park, Malton. Mr. J. MITCHELL BOTTOMLEY, Architect, Middlesbrough.  
*Accepted Tenders.*  
For Excavation, Mason, Bricklayer, Plaster and Slater Work.

|                |                              |        |    |   |
|----------------|------------------------------|--------|----|---|
| Hodgson .      | <i>Carpenter and Joiner.</i> | £1,371 | 0  | 0 |
| Wilson .       | <i>Plumber and Glazier.</i>  | 878    | 0  | 0 |
| J. & J. Read . | <i>Painter.</i>              | 227    | 10 | 0 |
| Shepherd .     |                              | 36     | 0  | 0 |

Total 2,512 10 0  
All of Malton.

**NEWCASTLE-ON-TYNE.**

For Building Range of Shops and Show-rooms, Pink Lane, Newcastle-on-Tyne. Mr. WILLIAM GLOVER, Architect, Newcastle-on-Tyne.

|   |              |     |      |
|---|--------------|-----|------|
| Mason, Carpenter and Joiner, and Plasterer. | £3,971       | 0   | 0    |
| Scott                                       | Ironfounder. |     |      |
| Vaughan & Dymond                            | Plumber.     | 292 | 10 0 |
| Walker & Emley                              | Painter.     | 286 | 5 4  |
| Richardson & Co.                            | Slater.      | 279 | 0 0  |
| Beck & Son                                  |              | 68  | 9 10 |
| All of Newcastle.                           |              |     |      |

**NORTHAMPTON.**

For Laying of Water-pipes.  
Moss, Liverpool (*accepted*), 16-inch pipes, 2s. 8½d. per yard; 12-inch, 2s. 4½d. per yard; 4-inch, 1s. 4½d. per yard. Crossing streams, £60.

**PLYMOUTH.**

For Enclosing and Fitting the Plymouth Show Yard, for the Devon County Agricultural Association. Mr. JOHN SPINKS, Secretary and Surveyor.  
Blowey, Plymouth . . . £948 6 8  
Berry, Plymouth . . . 944 15 5  
Allen, Taunton . . . 732 19 4  
Foaden, Ashburton . . . 730 17 8

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Fire-Engine Station, Residences, and Fire-  
men's Cottages for the Corporation of Not-  
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tects, 27 Regent Street, S.W. Quantities  
by Messrs. Hovenden, Berridge & Barnes,  
Brougham Chambers, Nottingham.

|                                 | Main    | Building | Cottages |
|---------------------------------|---------|----------|----------|
| Peto Bros., London              | £69,578 | £5,999   |          |
| Lovatt, Wolverhampton           | 67,575  | 6,085    |          |
| Hind, Nottingham                | 64,660  | 4,730    |          |
| Foster & Dicksee, Rugby         | 64,000  | 5,500    |          |
| Hodson & Son, Nottingham        | 63,141  | 5,642    |          |
| Parnell & Son, Rugby            | 62,823  | 6,043    |          |
| Bott & Wright, Nottingham       | 62,525  | 5,475    |          |
| Moulson & Son, Bradford         | 61,900  | 5,100    |          |
| Simpson & Son, London           | 61,970  | 4,500    |          |
| Kirk & Randall, Woolwich        | 61,175  | 5,260    |          |
| Horsman & Co., Wolver-          |         |          |          |
| hampton.                        | 60,950  | 5,650    |          |
| Bell & Sons, Nottingham         | 60,688  | 5,104    |          |
| Holdsworth, Bradford            | 60,250  | 4,950    |          |
| Messom, Nottingham              | 59,999  | 5,429    |          |
| Warburton, Manchester           | 59,866  | 5,524    |          |
| Adcock, Dover                   | 59,600  | 5,130    |          |
| Wheatley & Maule, Not-          |         |          |          |
| tingham.                        | 59,150  | 4,747    |          |
| Vickers, Nottingham             | 58,782  | 4,950    |          |
| Walker & Slater, Derby          | 58,750  | 5,250    |          |
| Fish & Sons, Nottingham         | 58,567  | 5,052    |          |
| GABBUTT, Liverpool ( <i>ac-</i> |         |          |          |
| <i>cepted</i> )                 | 57,200  | 4,500    |          |

**PONTYPRIDD.**

For Alterations to Chapel, Pontypridd. Mr.  
THOMAS ROWLAND, Architect, Ponty-  
pridd.  
Thomas & Edwards, Pontypridd £1,260 0 0  
Jenkins, Porth . . . 1,240 0 0  
Davies, Cardiff . . . 1,230 0 0  
Jenkins, Merthyr . . . 1,200 0 0  
South Wales Joinery Company,  
Llantrissant . . . 1,084 0 0  
WILLIAMS, Pontypridd (*ac-*  
*cepted*) . . . 1,048 0 0  
Julian, Pontypridd . . . 1,037 0 0  
James, Taunton . . . 947 0 0

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and Approaches to carry Iron Girder Bridge  
at Rodington, for the Wellington Rural  
Sanitary Authority.

|                            |      |    |    |
|----------------------------|------|----|----|
| Parker, Rowton             | £483 | 0  | 0  |
| Smith, Shrewsbury          | 470  | 0  | 0  |
| B. Brown, Shrewsbury       | 468  | 16 | 10 |
| Ralphs, Rodington          | 451  | 16 | 5  |
| Harris, Shrewsbury         | 435  | 0  | 0  |
| MARSHALL BROS., Shrewsbury |      |    |    |
| ( <i>accepted</i> )        | 431  | 0  | 0  |
| J. Brown, Shrewsbury       | 430  | 0  | 0  |

**SANDWICH.**

For Building School, Sandwich. Mr. CHARLES  
BELL, Architect, 9 New Broad Street, E.C.  
Quantities by Mr. Henry Lovegrove.

|                                       |      |    |   |
|---------------------------------------|------|----|---|
| Avard, Maidstone                      | £383 | 0  | 0 |
| Styles, Margate                       | 347  | 0  | 0 |
| Brett, Sandwich                       | 321  | 16 | 0 |
| Denne, Deal                           | 318  | 0  | 0 |
| Simmons, Sandwich                     | 340  | 0  | 0 |
| Rolfe, Sandwich                       | 312  | 13 | 0 |
| Styles, Sandwich                      | 305  | 0  | 0 |
| Webster, Folkestone                   | 300  | 0  | 0 |
| WISE & SONS, Deal ( <i>accepted</i> ) | 270  | 0  | 0 |
| Wright, Ham Street                    | 225  | 0  | 0 |

**SEAFORD.**

For Construction of two Flushing Tanks, Gul-  
lies, and other Sewerage Works, Fixing  
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*Flushing Tanks and Sewerage.*

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Fears, Seaford.

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*New Road.*

|                        |      |    |   |
|------------------------|------|----|---|
| Longley, Crawley       | £124 | 0  | 0 |
| Tobitt, Seaford        | 122  | 0  | 0 |
| Allnock, Seaford       | 120  | 0  | 0 |
| Pettitt Bros., Seaford | 95   | 0  | 0 |
| Green, Seaford         | 87   | 15 | 0 |

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**STONE.**

For Extension of Male Division of the City of London Lunatic Asylum at Stone, Kent, for the Corporation of the City of London. Mr. HORACE JONES, Architect. Quantities by Messrs. William Reddall &amp; Son.

Perry & Co. . . . £4,956 0 0  
 Taylor & Son . . . . 4,808 0 0  
 Tuffee . . . . . 4,747 0 0  
 Holland & Hannen . . . 4,538 0 0  
 Blake . . . . . 4,470 0 0  
 Nightingale . . . . . 4,241 0 0  
 Wallis & Clements . . . 4,144 0 0  
 MOWLEM & Co. (accepted) . 4,133 0 0

**TRURO.**

For Reslating Central Roof of Meat Market, Truro. Mr. W. CLEMENS, City Surveyor.

Welsh . . . . . £239 0 0  
 Higgins . . . . . 193 17 6  
 Jose . . . . . 165 0 0  
 Farley . . . . . 149 8 0  
 M. & J. Clemens . . . . 131 0 0

**WALTHAMSTOW.**

For Alterations to the Boys' National Schools, Walthamstow. Mr. W. A. LONGMORE, Architect.

Good . . . . . £325 0 0  
 Fuller . . . . . 288 0 0  
 Reed . . . . . 245 0 0  
 Shurmur . . . . . 235 0 0  
 SCOTT (accepted) . . . . 213 0 0

**WALSALL.**

For Construction of Street and Outfall Sewers and Works in connection, Walsall. Mr. ARDEN HARDWICKE, C.E., Engineer.

Curral & Lewis. . . . . £4,289 0 0  
 Mackay . . . . . 4,057 0 0  
 BELL (accepted) . . . . . 3,690 0 0  
 Innes & Wood . . . . . 3,560 0 0  
 Surveyor's estimate . . . 4,075 0 0

**WELLINGBOROUGH.**

For Building Three Houses in Park Road, for Mr. Mee. Mr. E. SHARMAN, Architect, Wellingborough.

Underwood . . . . . £1,072 0 0  
 Henson . . . . . 1,025 0 0  
 Marriott . . . . . 1,020 0 0  
 Brown . . . . . 987 0 0  
 Harrison & Hacksley . . . 985 0 0  
 Ireson . . . . . 978 10 0  
 Clayton Bros., Cogenhoe . . 884 0 0  
 The others of Wellingborough.

**WEST BROMWICH.**

For Paving, &amp;c., at the Workhouse, West Bromwich.

Innes & Wood, Birmingham . £155 0 0  
 Mallin, West Bromwich . . . 141 0 0  
 JONES & FITZMAURICE, Birmingham (accepted) . . . 137 0 0  
 Owens, Wolverhampton . . . 120 0 0

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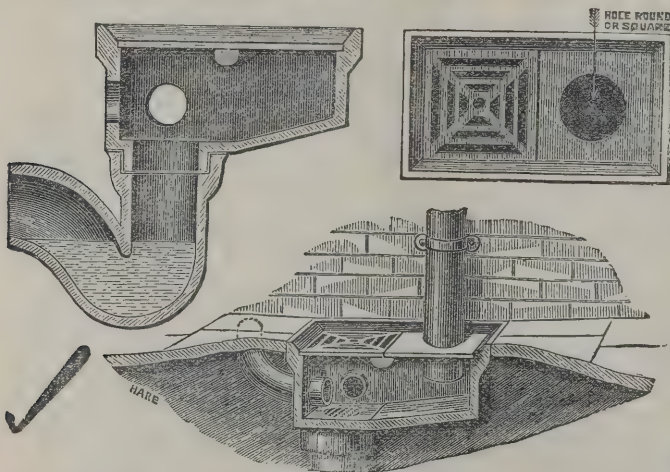
Knight, Northfleet . . . . £1,718 8 6  
 Ruttee, Bow . . . . . 995 0 0  
 Carter, Anerley . . . . . 920 16 0  
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**BUILDING EXHIBITION AT THE AGRICULTURAL HALL.**

THE sixth annual Building Trades Exhibition will be opened on Monday at the Agricultural Hall. Among the exhibitors are some who have not hitherto been represented at this exhibition. Others, again, are on the present occasion conspicuous by their absence, and possibly are reserving their powers for the International Inventions Exhibition; but a large bulk of firms who may always be counted on to give their support to the exhibition will be represented as usual, and, as far as can be judged in advance, the exhibition promises quite to equal, if not to surpass, the preceding ones, and to present in an interesting manner the progress achieved by industry in the time that has elapsed since the exhibitors met last year in friendly rivalry at the Agricultural Hall.

*Robert Boyle & Son.*

Messrs. ROBERT BOYLE & SON, of the Holborn Viaduct and of Glasgow, will, as usual, be represented at the exhibition. Besides the practical businesslike show of apparatus connected with warming and ventilation, by various modifications or by some special principle of action suited

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Proof Impressions of the following Illustrations which have appeared in "THE ARCHITECT" can now be obtained in a separate form suitable for Framing:—

**The History of Art.**

In Two Plates, reproduced from the Splendid Painting around Cupola, in Place St.-George's, Paris.

**BY M. FRANCOIS EHRMANN.**

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to meet the circumstances of different needs, to remove foul air and bring in pure air to buildings of all kinds, from the most monumental down to the labourer's cottage, railway carriages as well as ships' cabins, &c.—besides the plain and practical appliances, the same appliances



may be studied under decorative forms. The architectural forms, representing many styles, are quite a striking feature of Messrs. Boyle & Son's exhibit. These ventilators have been designed so as to harmonise with different styles of buildings, and among those shown will be seen elaborate designs in Gothic, Italian,

Classic, and Queen Anne. The latter, a new design, was on view for the first time at the Floral Hall Exhibition, and there it was much admired; and one pleasing detail to be noted in the composition is the roof covered with small red terra-cotta tiles. An elaborate Byzantine design shown at the Floral Hall is absent, but in its place is a design executed from an architect's drawings. If a visitor wishes to see the principles on which air-pump ventilators, soil-pipe ventilators, and cowls, &c., act, he will find models shown by Messrs. Boyle & Son clearly illustrating their action.

#### W. H. Lascelles & Co.

Messrs. W. H. LASCELLES & Co., 121 Bunhill Row, E.C., exhibit at their Stand, No. 128 Avenue C, and 148 Avenue D, some excellent examples of their well-known concrete and joinery. From a well-assorted variety, we especially noticed a concrete bay window and porch, for Messrs. Perry & Co., of Bow, designed by Mr. Basset Keeling; two enriched panels, designed by Mr. J. M. MacLaren, architect; also several finials, copings, balusters, lintels, slabs, &c.; also a fine chimneypiece, with overmantel, designed by Messrs. Ernest George & Peto; and a wainscot door with raised panels and a collection of mouldings, designed by Mr. H. E. Rumble, Eastbourne. The exhibits of this firm are always a source of attraction to the visitors who throng the hall, and the name of the firm is a household word for good work. Greenhouses, conservatories, all sorts of wooden buildings, and, moreover, all varieties of high class joinery are supplied by them. Chimneypieces, dados, stairs, and fittings for churches, public buildings, offices, &c.

#### T. Lawrence & Son.

Messrs. THOMAS LAWRENCE & SON, of Bracknell, Berks, exhibit a moulded brick arch doorway on piers of gauged and moulded brickwork, with the year and wreath of flowers carved over the arch. This, with the handsome oak door and frame, is intended to be used as the private entrance to the Bracknell Supply Store, a handsome building faced with Messrs. Lawrence &

Son's red facing brick, the piers being in gauged work of their noted rubber bricks. The carved work is of the same bricks. A drawing of this building is on view at their exhibit. On one side and the back of their exhibit is shown a specimen of their red wall and roofing tiles, and on the other side strawberry tiles. The tiles manufactured by this firm are made from a clay that resists, when burnt, any weather, and are impervious to moisture, and will retain their colour in any climate and the most exposed place. That the bricks and tiles manufactured by Messrs. Lawrence & Son are giving great satisfaction may be gathered from the fact that year by year their trade is increasing. Last year the works were considerably enlarged, and more bricks and tiles were turned out than in any previous year, and now again, in order to meet the increasing trade, not only are the present works being still further enlarged, but an entirely new brickyard is being opened. This speaks for itself.

#### St. Pancras Ironwork Company.

The ST. PANCRAS IRONWORK COMPANY, St. Pancras Road, N.W., have a choice exhibit of some of their specialties at their stand. Among them we should like to call attention first of all to a beautiful spiral iron staircase of floriated pattern and most artistic composition throughout, from their own designs, and specially suitable for conservatories, private residences, &c., and indeed for any position where the surroundings necessitate a particularly ornamental or high style of work to be in harmony with the rest. The design of the panel balusters, treads, risers, &c., have evidently been carefully studied, and the result is most effective, whether looked at as a whole or as individual specimens of good design in metal-work. From every point of view and in all details down to the smallest, to the very collars of the treads, there is character about the design of the work, power as well as judicious reticence. The company are among the oldest manufacturers of iron staircases in the world, and the increased demand of late years has been met by the firm in a variety of staircases excellently designed and

## WALTER JONES, MAGNET WHARF, BOW BRIDGE,

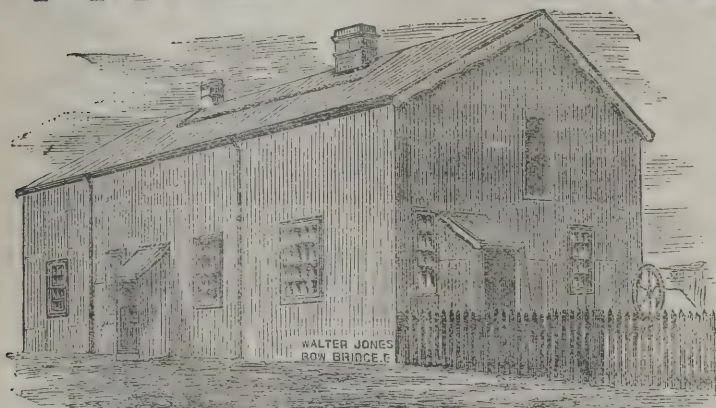
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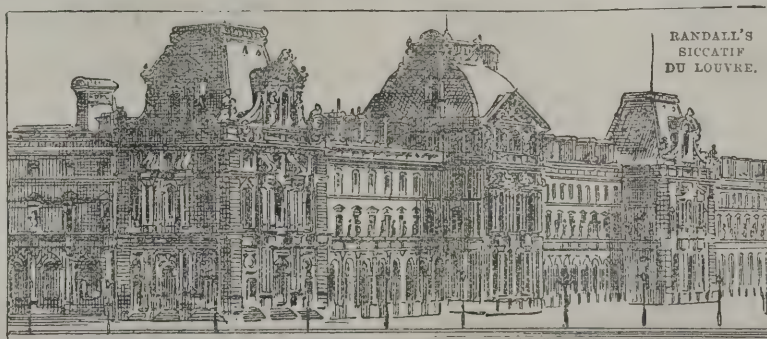
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improved in construction, so that they have become serviceable where formerly they would have been considered unsuitable. The spiral staircases made by the company are truly geometrical and self-supporting, which is not always the case in such staircases. Notwith-



standing the good work and the employment of the best material the prices are low, which is rendered possible by the care and attention given to the details of the design, and to the perfection of the manufacturing plant, &c. Besides working out their own designs, architects' drawings are carried out when ordered. Another staircase less elaborate, but of careful and ornamental design, must be mentioned. Our illustration will give an idea of it. The

firm have been carrying out a good deal of work lately in fitting various institutions with staircases, at several infirmaries, &c., and a work has just been completed at the Shoreditch Infirmary, and various lunatic asylums have been fitted with outside staircases as fire-escapes. Visitors to the exhibition will do well to inspect the ornamental wrought ironwork shown. It is all hand-forged, and a capital reproduction of the style of Mediaeval ironwork is presented. A lamp bracket with quaint details, candelabra, balusters, grillework for gate, grillework for segment over gateway, and various samplespecimens of hand-forged work. An elaborate model of a stable is shown, consisting of five stalls and loose box, the stalls furnished with the safety barrier bars, patent paving and gutters for flooring, and glazed tiles at head of stall and round loose box, and the stable fitted with the patent adjustable ventilators. The reputation of the company in regard of specialities and fittings for stables is however well known.

*Robert Adams.*

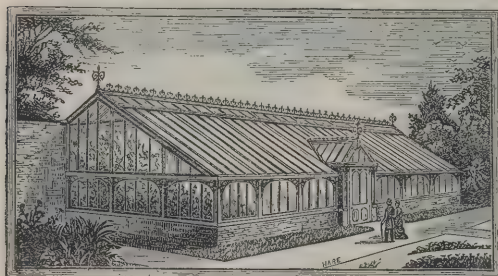
Mr. ROBERT ADAMS, of 7 Great Dover Street, Borough, shows a new patent spring hinge, "The Victor." This is a hinge designed to obviate the discomfort arising from swing doors in exposed situations, which do not offer sufficient opposition to strong winds, so that intolerable draught fills the building. This spring is so made that the slightest pressure in one direction will swing the door open, from the other direction it can only be opened by main force. By a simple operation the hinge can be made to act in the reverse direction. The spring only cushions a quarter of an inch in working the door three-fourths of the entire circle. The pivots working on centres in the levers have but little friction, and the wear can be compensated by turning set screws at will. The obvious utility of the spring hardly needs to be dwelt on. Mr. Adams has introduced various modifications and improvements in certain of his well-known specialities. An improvement of an ingenious description is the substitution of a folding chain instead of a bar in the fan-light opener. By pulling a cord the

light is opened a desired distance, and becomes immovably fixed directly the grasp of the hand is released. Mr. Adams devised an easy mode of converting ordinary windows into reversible windows on the anti-accident principle. This was done by making a slit in the sash and sash-frame, into which metal tongues are slid, also pivoting the sashes centrally. The windows open as usual, the tongue hinders wind shaking, and checks draught when shut. To clean the



windows the tongues are withdrawn, and the sashes can then be reversed. An improvement lately made in regard to the use of metal tongues in the reversible windows is that they can be so made that the turn of a key releases the window for reversing, and obviates the trouble of removing the tongues. Among other things shown are the Norton check-door and spring and the panic door, for securing immediate means of exit in case of fire in public or other buildings.

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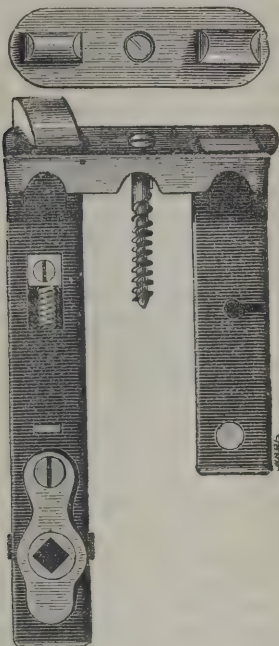
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*Broughton & Co.*

Messrs. BROUGHTON & CO., 169 Queen Victoria Street, E.C., show their patent Chelsea mortise and other locks. The Chelsea patent reversible centre-bit mortise lock is a great improvement on the old-fashioned door-locks of cumbrous manufacture, and is superior even to later and better class locks. The advantages



claimed for it are that a mortise can be cut in a door and the lock inserted and fixed in five minutes, and that the mortise is cut with a centre-bit and without knocking the door about with mallet and chisel. The sinking for the striking-plate can be cut in a similar manner with the same bit. The mortise required for the lock does not injure the door. One screw only is required to fix the lock in the door, and

the lock can be withdrawn from the door instantly by simply unscrewing this fixing screw, which pulls the lock out with it. This renders it easy to remove the lock for painting the door, or for oiling or repairs to the lock itself, and its removal does not injure the door in the least, as no lever is required to prize it out. Also the furniture roses can be securely fixed by screws which go nearly through the door, and by the side of the barrel of the lock. With the ordinary mortise lock the furniture roses can only be secured by screws which pass a short distance into the wood, and if, as often happens, the screws are a little too long, their points come against the lock before they are fully screwed home, and an extra turn of the screwdriver strips the thread in the wood, rendering the screws useless. For this reason that class of furniture in which the knob is attached to the rose has been found unsatisfactory, particularly with thin doors. With this lock all objection of the kind disappears. Without enumerating all the advantages of the lock, it will be sufficient to note that it is substantially made of the best materials, and with the best workmanship, and the greatest care is taken in its manufacture to insure its accurate working and durability.

*Phillips's Patent Lock-jaw Tile Company.*

Mr. CHARLES D. PHILLIPS, patentee of the lock-jaw roofing tiles, Emlyn Works, Newport, Mon., occupies Stands No. 93, Avenue B, and 94, Avenue C. He shows the same class of roof as he exhibited last year at the Agricultural Hall, being a sample of a weatherproof roof, impervious to wind, rain, and snow. The lock-jaw principle will be seen to be that each tile locks into its four neighbours respectively, on sides, top and bottom, by means of a system of grooves, with corresponding tenons, on each of the four sides of the individual tiles. Half tiles are made similar to the above in every respect, and lock in the same manner, so that in every alternate course a half tile is used, which forms a "break-joint" throughout the roof. These half tiles are of two sorts, the single grip and the double grip, the latter, as its name implies,

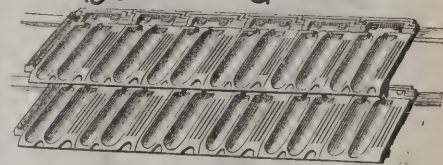
having a double grip, with two grooves and two tenon joints instead of single ones. The single grip makes a notably light roof, weighing 600 lbs. per square of roofing. The double grip is heavier, and more suited by its massive appearance for mansions, &c., weighing 800 lbs. per square. An alluvial plastic clay is used for the manufacture, and in the process the pores of the clay are effectually closed by pressure of

SINGLE GRIP.



SECTION OF GRIP.

DOUBLE GRIP



SECTION OF GRIP.

heavy weight; the clay thus acquires density of texture, and a beautifully smooth surface. The preparation and after manipulation of the clay are matters of primary importance. In many ways these roofing tiles have the advantage over slates or ordinary tiles, and a point worth notice is that the roofing tiles are admirably adapted for use on iron roofs. In addition to the tiles themselves all accessories for finishing the roofing in character can be obtained from the firm, such as ridge tiles of varied design, weather-boards and finials, both plain and ornamental, and shields or apex for the centre.

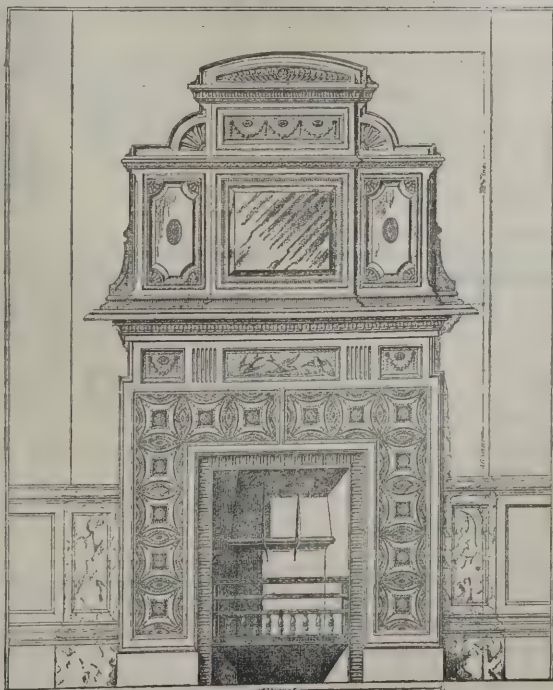
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*Chambers, Monnery & Co.*

Messrs. CHAMBERS, MONNERY & CO., of 41 Bishopsgate Street Without, E.C., have arranged a large and varied exhibit of general builders' ironmongery, well worth a close examination. The firm have a reputation for their productions, and during the past twelve months they have been exceedingly busy in meeting the numerous wants of their *clientèle*, and as yet the press of business shows no signs of slackening. Attention must be called to a new range.

Monnery's Patent Cast Wall Ties.



Monnery's Patent Cast Wall Ties (Turned down points).



The "Fawcett" range is a self-setting range with close fire, a serviceable and efficient range that is likely to become a favourite. It is compact, well arranged, and economic of heat, that is not let run to waste before doing good duty. The useful kitchenette, the improved cottage range, appears among the exhibits, being an open fire-range having the advantages of a kitchener. The oven is large considering the

dimensions of the range, and the flues are all arranged so as to utilise the heat to the utmost. The firm have several new pattern registers—tile, slow combustion, &c.—which are sure to find favour. The wall-ties for bonding hollow walls made by the firm are well known. At the Health Exhibition last year they took a bronze medal award. Among other things noticeable are the assortments of fancy wood and polished brass furniture for doors—entrance doors as well as internal ones. It is understood that a new departure is being taken by Messrs. Chambers, Monnery & Co. in plumber's goods, the price-list for which compares very favourably with other lists in the market.

*Attwood & Co.*

Messrs. A. ATTWOOD & CO. (late Salmon, Barnes & Co.), of Ulverston and 20 Bucklersbury, London, E.C., exhibit at Stand 16, Avenue A, their well-known revolving shutters and divisions, worked by patent balance motion, patent A B C self-sustaining lifts, model of hydraulic passenger lift, and patent revolving and expanding shop front guards or grilles. The secret of the success obtained by this firm in the manufacture of revolving shutters lies in the patent balance motion. This motion insures the shutter a long life and absolute freedom from drag on the roller or working parts, so destructive and prevalent in the working of shutters manufactured by other firms. These shutters are now being largely adopted for use in schools, colleges, chapels, halls, &c., as divisions, with very successful results. Their patent A B C self-sustaining lifts are adapted for all purposes, and may be driven by gas or steam-engine, or worked by hand-power. These lifts possess some entirely new features. They require no hand-brake; the cage cannot possibly run down by overloading or mismanagement, and are therefore unusually safe, no matter how inexperienced the individual may be who is working them. The gearing is complete on one base plate, and easily fixed and adjusted. There are no complicated parts difficult to get at or regulate, all being of the most simple construction and easy of access. The

automatic brake-wheel is so arranged as to increase its grip with increase of load, and however rapidly the lift is worked there are no shocks or jerks in its travel. The next we notice is a model of an improved hydraulic, direct-acting balanced lift. This is shown as worked from an accumulator contained in the plinth or case on which the lift is placed. The cage and ram are balanced by hydraulic pressure; automatic stops are applied to the starting-chain, so that the lift stops itself at top and bottom, and the valve arrangements are so designed and adjusted as to give the most perfect control over the movement of the cage. The model of patent revolving and expanding grille or guards for shop windows, doorways, &c., explains itself, but we think a description of their construction may not be uninteresting to our readers. They are various forms of iron openwork protections arranged either to coil on rollers like revolving shutters, in conjunction with their patent motion, or to expand and contract somewhat on the lazy tongs principle. This form of protection to shop windows, &c., is coming largely into vogue, especially in large towns, where a certain amount of police supervision is necessary when the premises are locked up for the night.

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Messrs. KITE & CO., of Christopher Works, Chalton Street, London, N.W., exhibit their well-known roof and other ventilators. A turret ventilator of new design will commend itself to architects by its very moderate price and adaptability for use on exposed parts of buildings, where its appearance would certainly not detract from the general effect. They also show models of ventilators which can be put together in parts, and be placed in towers, &c., of buildings already erected or in course of construction. In cases where there are no towers or turrets, Messrs. Kite supply their various kinds of plain and ornamental ridge ventilators, or a special form of their patent, which is made to fit in with the pitch of roof, and does not appear above the ridge line. This firm are constantly adding to their already large assortment of patterns, and are prepared to follow out any

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designs suggested by their clients, at little extra expense, to bring their ventilators, where applied, in conformity with the architecture of the building. With respect to interior ventilation—private rooms, &c.—their chimney-breast ventilator is so generally known that a description is unnecessary, but the ingenious method



Nº 4.

which they show of using ornamental items, such as brackets, mirrors, hanging cabinets, &c., as mediums for introducing fresh air into rooms, must commend itself to most householders who dislike the appearance of the familiar Tobin's tube. Their drain ventilators, for which a silver medal was awarded at the Health Exhibition, are in very general use by municipal authorities, who have been improving their system of drain ventilation during the last few years, such as Brighton, Torquay, Hastings, Burton, &c., and recently by the School Board for London, their price, as well as their efficiency, being a great recommendation. Messrs. Kite obtained the highest award, viz., gold medal for exhaust ventilators at the Health Exhibition, after practical test, and they

claim that their ventilators, comparing the amount of ventilating way given, are the cheapest of any in use. This firm are at present engaged on ventilating work for Ilkley Hospital, West Bromwich Institute, Hinckley Board School, and several public buildings in Ireland and elsewhere, and have in hand contracts for the London Tramways Company's stables, and various Government departments.

### FLORAL HALL EXHIBITION.

THIS Exhibition of Architectural and Building Trades closed on Saturday evening, after remaining open the whole of the week, and in the following remarks we close our notices of the exhibits shown at the Floral Hall:—

#### Burke & Co.

Messrs. BURKE & Co., 17 Newman Street, W., showed some exquisite decorative work by application of their marble mosaic, Venetian mosaic, and marble for floor and wall dados, wall-lining, and floors. Also figured mosaics, marble balustrades, columns, vases, dados, wall-lining, &c.

In describing the exhibits of Messrs. Burke & Co., it may be remarked that visitors to the Health Exhibition will remember the beautiful mosaic representing "Justice," which was made expressly to show at that exhibition. It formed a striking object at Messrs. Burke & Co.'s stand at the Floral Hall. All the tints and all the shades of tints in the composition are of different marbles. Among the magnificent marble dados shown was a rouge royal, with alabaster panel, double moulded top; specimen of a dado for the Hotel Métropole, Charing Cross, the execution of which was begun on March 6. A specimen column for the same hotel was also shown. A specimen was shown of the beautiful marble griote dado lately executed at St. Marylebone parish church, a most effective and massive work in marble. The rouge royal columns in front of this, 10 feet in height, are also the work of Messrs. Burke. Among other specimens was a rouge royal dado, with plain moulded cornice

of Belgian black marble and skirting of fossil marble; an Egyptian granite, with mouldings and base of Belgian black marble; Italian griote, grand antique base with moulding, and grand antique top moulded; also Devonshire marbles, with mouldings and base, &c., of Levant, vert, and Siena; specimens of marble balustrade pilasters, &c., and specimen of balustrade of the grand staircase at the Holborn Restaurant. The exhibits at this stand were particularly rich and deserving of attention.

#### Phillips's Patent Lock-Jaw Tile Company.

At Stand No. 72 this company showed a structure the roof and walls of which were covered with the patent lock-jaw tiles. Mr. CHARLES D. PHILLIPS, M.I.M.E., the patentee, Emlyn Works, Newport, Mon., by invitation read a paper on Wednesday afternoon (March 4) on the subject of "Clay Ware," with special reference to the exhibit at his stand, in which he mentioned that the patent roofing tiles had been for three years successfully in the market, and he was convinced that their merits required only to be more widely known to insure their immediate and universal adoption both at home and abroad. The object of the invention is the production of a roofing tile that will form a perfectly weather-resisting roof and be impervious to wind, rain, or snow, while combining all that is necessary for an efficient roof, economical and ornamental. Thus on each of the four sides of the tile a system of grooves with corresponding tenons is formed, so that each tile locks into others on each side, top and bottom; and the invention has the novelty of the bottom tile butting against or locking into its corresponding lower one. Arrangements have been made with the proprietors of seven works in different parts of the country for the manufacture of the tiles during this year to the extent of a million, which is about the quantity sold at the present day. Considering the tests these tiles have undergone, and their success where used, Mr. Phillips is warranted in considering that wherever their merits become known they will be used.

## SIXTH ANNUAL BUILDING TRADES EXHIBITION, AGRICULTURAL HALL, ISLINGTON, N., STAND 10.—MARCH 16 TO 28.

Awarded a DIPLOMA at the FISHERIES, 1883; also the SILVER MEDAL at the HEALTHIERIES EXHIBITION, 1884



# TWO MILES

OF



# THE "VICTORIA" DRY GLAZING!

ONE YARD WIDE.

Messrs. DEARDS have been favoured with the order from Mr. J. C. HUMPHREYS to GLAZE the **NEW BUILDINGS AT THE INVENTIONS EXHIBITION, 1885,** At SOUTH KENSINGTON, with their Patent "VICTORIA" DRY GLAZING. About 50 Tons of Glass will be used for the purpose, 30,000 Feet super.

MESSRS. DEARDS have also just erected **ONE LARGE CONSERVATORY** 100 feet long and 22 feet wide, requiring 5,000 feet of Glass, for Messrs. ELSDON & CO., Cambridge.

Also Re-glazed the "ROYAL EXOTIC NURSERY," South Kensington, for Messrs. WILLS & SEGAR, the Roof of which had been leaking for years, and is now made perfectly watertight by the Patent "Victoria" Dry Glazing.

And they are now erecting **A LARGE PEACH-HOUSE** for Madame ADELINA PATTI, Craig-y-nos Castle, South Wales, 100 feet long, besides numerous other Orders.

Orders for the "Victoria" Dry Glazing have been executed for:—

Sir H. J. SELWIN-IBBETSON, Bart., M.P.,  
Down Hall, Harlow.  
Major TAIT, Epping.  
W. F. MASTERS, Esq., Brixton.  
Rev. ALBERT DEARN, Burgess Hill.  
Mr. T. SELBY, Victoria Street, Westminster.

G. R. HUNT, Esq., Hornsey.  
Major HORROCKS, Paddock Wood.  
Messrs. GURTEEN & SONS, Haverhill.  
Mrs. MONTEFIORE, Worth Park, Sussex.  
S. CHISENHALE-MARSH, Esq., Epping.  
CHAS. EDE, Esq., Guildford.

Sir HOWARD ELPHINSTONE, Bagshot.  
Mr. J. BERRYMAN, Redhill.  
C. W. F. GLYN, Esq., Durrington House, Sheering.  
The Council of Health Exhibition—All the GLASS CASES for the FANCY COSTUMES.  
Mr. MAYAL, Studio, Park Lane, W. &c., &c.

Also 6,000 Feet at the FISHERIES and the HEALTH EXHIBITIONS.

The "Victoria" Dry Glazing Works, Messrs. DEARDS, HARLOW, Essex.



*C. Kite & Co.*

Messrs. C. KITE & CO., Christopher Works, Chalton Street, N.W., showed at their stand a model house, by means of which visitors were able to see the practical working of the ventilators made by the firm, as applied to ordinary dwelling-houses, rooms, &c. Their patent exhaust roof ventilators are used, and found to promote thorough and efficient ventilation without draught in private houses, dwelling-rooms, offices, churches, schools, halls, &c. They are plain or ornamental, and fitted to ridge, lean-to, or flat roofs, or may be fitted into openings in the side of walls where the circumstances of any particular case renders connection with the roof impracticable. Their turret ventilators are of metal wholly, or of metal and wood, in varied designs, and also are made to fit into turrets of architects' own designs, whether of round, square, or polygonal forms. The chimney-breast ventilators, wall inlet ventilators, along with their practical merit are unattended with the objection that they produce an unsightly appearance, as they can be disguised by any ornament that has a place in the room, for instance, by mirrors, hanging cabinets for old china, &c. The drain ventilators must also be mentioned as most useful appliances, most efficient and inexpensive, including the induced current outlet ventilators and down-cast inlets. The practical working of all these appliances could be seen by model apparatus. It will be remembered, too, that Messrs. C. Kite & Co. received the highest award, a gold medal, at the Health Exhibition for their induced current ventilators, and a silver medal for drain ventilators.

*John Grundy.*

Mr. JOHN GRUNDY, of 30 Duncan Terrace, City Road, N., showed his patent warm air ventilating firegrate, which has proved so successful and such a favourite among his customers. While the heating surface is greater than that of other firegrates, the chimney is used for a considerable distance as a hot-air chamber for diffusing heat. Thus,

with great success, it has been applied to churches, chapels, schools, and other buildings. Durability, safety, and simplicity are combined in the patent. Applied to churches, it not only diffuses warmth throughout the building in cold weather, but in summer time the apparatus becomes the means of introducing cool air into the church.

*Hayward Bros. & Eckstein.*

Messrs. HAYWARD BROS. & ECKSTEIN, of Union Street, Borough, S.E., were well represented. On Friday (the last day but one of the exhibition) a new coal-plate, patented the previous day, was exhibited for the first time. The patent self-locking coal-plate is, as its name implies, self-locking, and locks itself when dropped in its place just as easily as the front door of the house latches itself when pulled to in leaving the house. The contrivance is as simple as it is effective. From the inside of the cellar it can be set free by little more than touching it; but there is no possibility of moving or opening it from above. An explanatory description of the patent will be given next week in the notice of exhibits of this firm at the Agricultural Hall. The great power possessed by Hayward's patent semi-prism pavement lights, for throwing the light into remote corners where otherwise no light could penetrate, was ingeniously shown. A specimen was shown of Hayward's improved circular iron staircases, tread, riser, and spandrel in one, &c.

*Pictor & Sons.*

Messrs. PICTOR & SONS, of the Bath Free-stone Works, Box, showed a good variety of Bath stone from their quarries, or mines, as these quarries may be called, for, with the exception of one quarry, the stone is worked from underground, oil lamps being used now in the workings instead of candles, as used to be the case. As a weather stone Box ground will yield to none, and a standing proof of its qualities may be seen in the church at Box, built in the thirteenth century. Messrs. Pictor & Sons showed, at their Stand, No. 65, 12-inch cube

specimen samples of Box ground, Stoke ground, Corsham Down, and Farleigh Down stone. The purpose and position for which the stone is to be used would determine the particular kind, in view of endurance, economy in working, suitability for carving, &c. Samples of stone tracery, and a section of fluted column with carved cap, were also shown. Many other specimens served to show the adaptability of the stones for general use.

*James Stiff & Sons.*

Messrs. JAMES STIFF & SONS, London Pottery, Lambeth, showed an excellent collection of architectural terra-cotta in buff and red, including a specimen of a capital and column which has been carried out, showing good work deeply undercut; also medallions, cornices, mouldings, terminals, ornamental balusters, string courses, spandrels, execution and design especially noteworthy in all. Among sanitary ware shown was the Weatherby disconnector trap improved. All syphons and seals being outside the case of the trap allow of access for removal of any grease. This apparatus is now made with an air-tight cover for fixing indoors, arranged with valve which excludes all gas. The interceptor sewer-air trap which effectually prevents any sewer-gas from drains entering the house, and is so arranged as to cause a minimum of contamination to the outer or surrounding air. Drain-pipes, with connecting bends, junctions and gully traps, kitchen and hospital sinks, patent drain disinfectors, patent drain inspection shafts, air bricks, ventilating damp-proof courses, &c., were among the exhibits shown. The Weatherby registered up-draught louvre cowl must also be mentioned. The firm have completed four large groups of statuary for the Government at Calcutta, and photographs of these gave a good idea of the meritorious work produced by this firm.

*F. Rosher & Co.*

Messrs. ROSHER & CO., of Upper Ground Street, Blackfriars, showed selections of architectural decorations, garden decorations and ornamental appliances, &c., in artificial stone.

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY. VENTILATION WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from H. C. Bartlett's, Esq., Ph.D., F.C.S., Report of 20th October, 1884.*

In contrast to these experiences of the effects of the method of ventilation adopted in the "Island Room," I may mention that on June the 4th I was instructed to report on the condition of the "Island Room" while the men were engaged in playing the illuminated fountains. I found the external air 54 deg., that of the room before it was shut up 56 deg., and a clinical thermometer, graduated to 115 deg., burst in its case, while the suspended thermometer registered no less than 127 deg. Fahrenheit. The atmosphere of the room was indescribably fetid and oppressive, and the attendants complained that they were exhausted and rendered unfit for further exertion after twenty minutes' work in that highly injurious condition of the air produced by the accumulation of carbonic acid. This is not to be wondered at when we reckon that each man expires from the lungs and skin three-fourths of a cubic foot of carbonic acid per hour, and the five arc lights each give off more than double that of a man; so that, in the unventilated condition, there was, at the end of half an hour, 15 feet of carbonic acid in addition to the possible half-foot the air of the room naturally contained, an accumulation of thirty times the largest permissible proportion of this dangerous contaminating gas.—I am, faithfully yours,

H. C. BARTLETT, PH.D., F.C.S.



prepared by the process known as Bennett's stent indurating process. Specimens also of their red and white Suffolk bricks and facing bricks, dark and bright; red moulded bricks, imths, splays, jambs, beads and labels, various ring courses, dentil, cable and leaf red pings, moulded coping and arch bricks, chimney pots, plain and special ridges, ornamental finials, &c. Among other matters the firm showed Messrs. Phillips's patent lock-jaw roofing tiles, as manufactured under license by Messrs. F. Rosher & Co.

#### Thomas Lawrence & Son.

Messrs. THOMAS LAWRENCE & SON, of Becknell, Berks, made a thoroughly effective display of happy results obtained by the employment of their red rubber and facing bricks, in the erection of a carved and moulded red brick arch doorway fitted with a handsome English oak door and frame as their exhibit. Completed by side and back walls, the structure as a whole showed the application of their iron-ry bricks, red wall tiles, &c. The rubber brick takes a remarkably sharp and clean finish, and nothing more could be desired in the way of sharp and clean outline in mouldings and arving. The material is most workable, and is cut with ease by a knife, and may even be rubbed away with the finger. This is an advantage that is not attended with bad results, because the material hardens with exposure, so that soon renders the work durable and lasting. The bricks, &c., have been extensively used in London and in the provinces with happiest results. It may be mentioned as regards the arch doorway that Messrs. Cubitt, of Gray's Inn Road, put up the work for Messrs. Lawrence & Son. No small amount of effect is imparted to the general appearance by the neatness of the courses, laid with a white putty joint with run line.

#### Norton Door-check Co.

THE NORTON DOOR-CHECK AND SPRING COMPANY, of 46 Holborn Viaduct, showed doors fitted with this check, an ingenious apparatus, which is fixed to the upper part of the door and frame over. The apparatus comprises a cylinder, piston, spring, and self-adjusting valve, which react on each other. The power is derived from the spring, the check from the piston cushioned on air, so that the door is surely closed and latched, though noiselessly. A gold medal was awarded at the Health Exhibition to this door-check.

#### John Matthews.

Mr. JOHN MATTHEWS, Royal Pottery, Weston-super-Mare, manufacturer of terra-cotta statuary, fountains, vases, &c., ornamental and plain wares for gardens, conservatories, &c., showed a collection of Poole's patent bonding roll roofing tiles. A small structure erected showed a roof covered with the patent tiles. The superiority of the tile consists in its bonding principle, and the advantages are strength, lightness, and security against rain-drifting and wind-stripping. The weight is given as one thousand tiles to four tons, covering eleven squares of ninety tiles to the square; weight per square, 7½ cwt.

#### J. A. Somerset.

At Stand 78, Mr. J. A. SOMERSET, of Newcastle-on-Tyne, showed for the patentee, Mr. Geo. Connell, of the same city, his mode of ventilation without draught, by bringing fresh air from the outer atmosphere, warming it by means of gas jets, and discharging it into the apartment pure and warm. The aid of diagrams is required to thoroughly explain the plan carried out, which differs somewhat from other modes now in use where gas is used. It may be adopted either by means of a shaft built in with the wall, by an independent shaft in or against the wall of the room, or the windows, by making them double, can be utilised in the same manner. In all cases the products of the gas are carried into the outer atmosphere, and an ingenious arrangement for preventing a back draught is adopted, which we think should be successful. In addition to the ventilating appliances, an ingenious "combination" dormer window was shown, that, being made of cast iron, can be fitted in three different positions—namely, projecting with flat roof, ditto with gable, or recessed in the slope of the general roof. By its use plastering

is dispensed with; it can be produced at from 30 to 50 per cent. less than an ordinary "dormer," and a great saving of time is effected in its erection. We may probably refer to these inventions more fully when illustrations are obtainable.

#### W. & R. Leggott.

Messrs. W. & R. LEGGOTT, general brass-founders, 70 Park Road, Bradford, showed their patent adjustments for opening and closing fanlights, skylights, ventilators. This most useful and efficient apparatus has given great satisfaction, and is spoken highly of by professional men of note among old and esteemed subscribers of this journal. Perfect ease and noiselessness of action is united with great simplicity and durability. It is self-locking, and remains fixed at any desired angle. They are capable of lifting a weight equal to 2 cwt., and also answer well in exposed situations where strong winds do not cause them to move or rattle. Pleasing examples of plain and ornamental metal-work were to be seen among the exhibits at this stand. In the show of fireplace furniture was an elaborately designed and executed pair of firedogs, with honeysuckle ornament conventionalised, and an especially neat fender, with machine-cut brass rail and polished black moulded base; also highly-wrought metal-work of floral pattern.

#### Ewart & Son.

Messrs. EWART & SON, 346 Euston Road, showed their various baths, water-heaters, ventilators, and smoke curers; also window conservatories and ornamental zincwork. The "Califont," a new water-heater, with special merits, was also shown. The advantages are—the parts separate for cleaning, so that if the boiler becomes foul from use or overpressure of gas, or any part gets by chance damaged, the whole can be taken apart, examined, cleaned, repaired without skilled labour and without going to the makers; also the burner swings outside for lighting, and thus avoids risks of explosion from confined gas; and also the joints are loosely fitted, rivetted, or seamed. No solder is used, so that the apparatus would not be melted if the gas were lighted before or left on after the water is running. The No. 4 quality warms three gallons of water per minute 60 deg. to 90 deg., that is to say, provides a warm bath of thirty gallons in ten minutes.

#### Engert & Rolfe.

Messrs. ENGERT & ROLFE, of Barchester Street, Poplar, E., showed their valuable specialities in roofing and other felts; and also brick work set in a cistern of water, illustrating the mode of application and the utility of fibrous asphalt as an anti-damp course in walls. The roofing-felts are of various kinds for a lining to be placed under the roof slates, and for covering the outside of roofs. It may also be used under iron roofs, and is invaluable as being impervious to wet as well as non-conducting.

#### Chambers, Monnery & Co.

Messrs. CHAMBERS, MONNERY & CO., 41 Bishopsgate St. Without, showed various stoves and ranges and general builders' ironmongery, and also their patent wall-ties for hollow walls, and an improved wall-tie arranged so that one tie grips two courses of brick. An admirable kitchener was also shown among others. This is a strong, improved, self-acting and self-setting kitchenette, with wrought bars and brick backs, combining the advantages of a kitchener and an open fire range—a most useful apparatus, cleanly in action trouble and time-saving.

#### Archibald Smith & Stevens.

Messrs. ARCHIBALD SMITH & STEVENS, of the Janus Works, Queen's Road, Battersea, manufacturers of the patent low-pressure suspended hydraulic lifts and the complete self-sustaining dinner lifts, double as well as single, showed a most serviceable lift at the Floral Hall, which had not been previously exhibited. This lift, Stevens & Major's patent self-sustaining lift for 2 cwt., has the gearing arranged to sustain the load in lifts of double form or single, by a brake which comes automatically into operation upon release of the hand-rope, but leaves the lift free as long as the hand-rope is pulled. A special arrangement for quick

lowering by the brake is provided. As in the other patent lifts of this firm, the grip of the brake increases directly with the load. Also was shown Stevens & Major's patent hydraulic door-spring and check, by which, when fitted to a double-action or swing door, the door is silently and steadily closed with or against the wind without slamming. Also the same fitted to a single-action door closing against a rebate. This apparatus is a hinge as well as a spring, and therefore no other hinges are required. It is fixed beneath the floor, and a carpet may cover it. There is no unsightly projection of apparatus, and nothing to distinguish it from an ordinary door. The moving parts work in oil, and thus are always sufficiently lubricated, and wear and tear reduced to a minimum. Nothing more perishable than metal is employed, no leather valves, &c. The closing action is very slow, giving time to pass through, and the rate of closing can be adjusted by any unskilled person. It is silent in action and inexpensive. The spring contains improvements not before exhibited.

#### D. Ap Lloyd.

An effective stand was arranged and exhibited by Mr. LLOYD, of 43 New Oxford Street, W., consisting of specimens of effective artistic wood mantelpieces and over-mantels, tastefully decorated in Adams's and other styles, and possessing the great merit of being very inexpensive. There were also some over-doors to match, pedestals for busts, &c., and some specimens of marble mosaic for halls, &c.

#### Lincrusta-Walton.

Messrs. F. WALTON & CO. contributed some good examples of their Sunbury wall decoration, consisting of three sections of wall and a door, all handsomely decorated in gold and delicate shades of colour. The door was specially worthy of attention, being elaborately adorned with mouldings and enrichments in lincrusta of remarkable sharpness and decision.

#### James Pulham & Son.

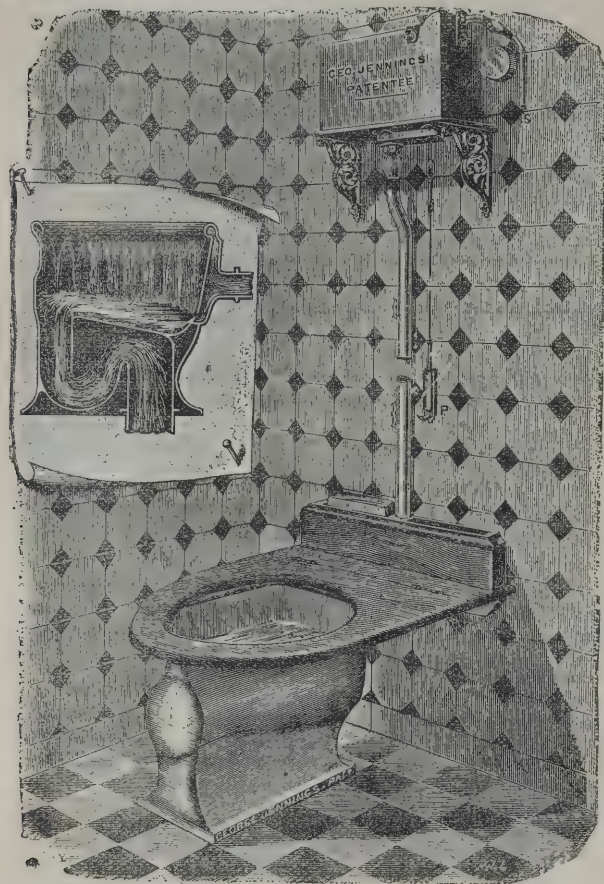
Messrs. JAMES PULHAM & SON, of the Terra-cotta Works, Broxbourne and Brixton, had a section in model of a dome they are preparing for the Inventions Exhibition, to show the mode of constructing a large or small dome with dome-building blocks; also were shown some full-sized dome-building blocks. The blocks are constructed to joggle themselves, so that the dome can be built without centreing. The inner and outer shell of the dome are bonded with dowels, and the haunches may be filled in with concrete. If desirable to carry up a staircase within the thickness of the domical roof, arrangements can be made for the purpose. Besides the outer abutment to carry the dome, an ornamental feature, giving extra support, may be introduced in the shape of an interior circular colonnade, the circumference of which would correspond nearly with that of the interior ring of the dome, and so add support to the inner shell. A panel of a fire-resisting door, which is being prepared to show at the Inventions Exhibition, was on view. The complete door will consist of three panels, made of the most fire-resisting clay produced. These are joined together by a special cement, and further consolidated by, so to speak, an iron framework, as provision is made for iron rods to pass through and bond all the panels. As the iron is a full inch inside the door everywhere, fire cannot touch or affect the metal part of the work. The doors may be used as swing or sliding doors, double or single, and hung so as to close by their own weight. Specimens of balustrading instanced the sharpness and truth of execution that the terra-cotta is capable of receiving; it showed no flash of fire, and in appearance was equal to any cut stone. Specimens of work done for the late Mr. Street, R.A., were shown, and samples illustrating the difference between the relieved and unrelieved work. Two capitals, side by side, were a striking instance. The hand-modelled ornamental work was effective, varied, red modelled on buff, and *vice versa*, &c., all sharp and true in execution. Terra-cotta balusters, bluish, to match Irish limestone; spar wall facing, a stone-like concrete; and red and stone-coloured concrete, among many other interesting samples, were to be seen. A weathered block shown had no signs of failure or decay.



# "THE PEDESTAL VASE," JENNINGS' IMPROVED W.C. APPARATUS

(Combination Urinal and Slop Sink).

Registered No. 16,300.



A PORCELAIN VASE set on a tiled or mosaic floor, within walls or a dado of glazed tiles. The usual wood framing, forming a storehouse for the retention and accumulation of *damp*, *dirt*, and *disease germs*, with the joints, crevices, and imperfections in work which the closet enclosure so often conceals, is entirely abolished. The seat is hinged, permitting free access for use as a *slop sink* or *urinal*, and for cleansing, so that the entire apparatus and space can be freely washed down. For this latter purpose the floor should be slightly sunk, and laid to fall to a grating, with waste carried through the external wall, and terminating in a copper flap valve to prevent draught.

The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with "**JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN**" 5 feet over, with  $1\frac{1}{2}$  inch down-pipe, ten apples (averaging  $1\frac{1}{4}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

**GOLD MEDAL AWARDED.**

THESE CLOSETS are already in use in Hospitals, Banks, Hotels, Offices, Private Residences, &c., with most satisfactory results, and, fixed in the manner described, in appearance and action leave nothing to be desired. By the novel arrangement of the supply to Basin, as shown in the sectional sketch annexed, the whole surface is well flushed and cleansed, whilst the bottom of Basin and Trap are thoroughly scoured by a concentrated rush of water which insures the instantaneous removal of the contents, thus overcoming the inherent defects in the many imitations recently produced of "**JENNINGS' MONKEY-CLOSET**" (the original form of wash-out watercloset), which was invented and patented by G. J. in 1852.

**GEORGE JENNINGS,**  
SANITARY ENGINEER, STANGATE, LONDON, S.E.  
A VISIT TO THE SHOWROOMS IS RESPECTFULLY REQUESTED.

**EASTWOOD & CO. (LIMITED).**  
LIME, CEMENT, AND BRICK MANUFACTURERS.

**SHOEBURY, COWLEY, & KENT BRICKS IN ANY QUANTITY DELIVERED ALONGSIDE.**  
Shoebury Malm Facings and Paviers | Dutch, Adamantine, and Red English | Laths, Plaster. Lathing in the best style. | Ridge Tiles, Terminals, &c.  
Stourbridge, Welsh, and Newcastle | Clinkers. | Moulded Bricks of all kinds. | Staffordshire Blue Bricks.  
Fire Bricks, &c. | Red and White Suffolk Bricks. | Red, White, and Black Rubbers. | Chimney Pots, Slates.  
Glazed and other Drain Pipes. | Greystone, Blue Lias, and Chalk Lime. | Broseley and Yorkshire Roofing Tiles. | Hair, Sand, &c. &c.

**PORTLAND CEMENT**

(WELLINGTON BRAND) of Unsurpassed Quality.

Sole London Consignees of Messrs. Gibbs & Co.'s (West Thurrock) **PORTLAND CEMENT**, and the **LUMLEY GLAZED BRICKS**.

R. A. ALLEN & Sons well known Red and White Suffolk Bricks, and the Chemical Paper Company's (Limited) Water Damp, Wind, & Dust Proof Paper.  
**BRICKFIELDS:—WEST DRAYTON, MIDDLESEX; SITTINGBOURNE, KENT.**

**WHARFS:—**

WELLINGTON WHARF, BELVEDERE ROAD, LAMBETH.  
CANAL BRIDGE WHARFS, OLD KENT ROAD, S.E.  
CHELSEA WHARF, LOTTS ROAD, CHELSEA.

KENSAL GREEN, HARROW ROAD.  
VICTORIA WHARF, MORTLAKE, S.W.  
BLACK HORSE LANE, RICHMOND; and  
LEA BRIDGE WHARF, CLAPTON.

**CASES FOR BINDING THE ARCHITECT.**

Price Two Shillings.—Office: 175 Strand, London, W.C.



# The Architect.

## THE WEEK.

ON Monday a meeting was held at the Office of Public Works, in Beresford Place, Dublin, to elect surveyors to represent the intending contractors in the taking out of the quantities for the new Science and Art Museum, of which Messrs. T. N. DEANE & SON are the architects. Messrs. GRIBBON & BUTLER were elected by a large majority, and as the working drawings are ready no time will be lost in preparing the bills of quantities. The contract is likely to amount to 100,000*l.*, and in the present state of the building trade a work of that amount is sure to secure many competitors. The Prince of WALES is to lay the foundation-stone on April 10, but the ceremony can be only formal.

THE Direction of the Musée de Cluny in Paris, which is so rich in examples of Mediæval archæology, has been confided to M. DARCEL, whose name is well known from his success as director of the tapestry works of the Gobelins. He will be succeeded at the latter by M. GERSPACH, chief of the bureau of National Manufactures. The appointment of M. DARCEL to the Thermes suggests that the collections are to be utilised for something more than antiquarian study.

SIR EDMUND BECKETT has at least one admirer, in the person of the Archbishop of YORK. A new church is about to be built in the Holmes, at Doncaster, and the foundation-stone was laid by Sir EDMUND himself, who appears to have gone through the ceremony without saying a word against architects, although he is the designer of the building. When it was his Grace's turn to speak, a very high admiration of Sir EDMUND was expressed. "Sir EDMUND BECKETT had not told those present," said the Archbishop, "that among his other accomplishments he possessed that of being a very eminent architect, and when the proposition was sportively made that he should undertake to be the architect, it was in a moment seriously embraced, and he was now in charge of that building as its architect. He ventured to foretell that that was a guarantee of its solidity, its beauty, and good taste. Sir EDMUND was not the man merely to draw a cheque for a large amount and hand it over to a committee, but he came to the work, he knew what needed to be done, and he took care that it was done. The church was already about paid for, so far as the building was concerned, and as Sir EDMUND was the architect one might very well rest satisfied that in due course a handsome church would arise." This shows a very satisfactory state of harmony—for we believe it does not always happen that a chancellor is a hero to his diocesan.

AT the present juncture it is impossible not to take interest in the long paper which Mr. H. G. PROUT, formerly a colonel on the staff of the Egyptian army, contributes to the *American Engineering News*. In 1875 Mr. PROUT was acting as chief of the geographical and topographical section in the General Staff Bureau at Cairo. He was ordered to join COLSTON's expedition to the Soudan, and to make a careful reconnaissance of the Suakim-Berber route, noticing particularly the water supply. He arrived in the harbour of Suakim in the last week of March, and on the 14th of April he reached Berber. The first difficulty in laying a line along the route is, he says, at about thirty-two miles from Suakim, where for some miles the pass is narrow and crooked and the gradient steep. Masonry would be required to protect the road-bed from the wash of the torrent, and possibly there may be trouble in getting practicable gradients without rock-cutting. According to Mr. PROUT, the defile is an extremely ugly one to cross in the face of an enemy. Then, after passing for nearly thirty miles through small valleys, the narrow pass between Wady Ahmed and Wady Haratree is reached. It is over 3,000 feet above the sea, and heavy cutting will be unavoidable unless another pass can be

found. The difficulties of the route vary, and at eighty-seven miles from Suakim is a winding pass which may be said to offer the last of them. Mr. PROUT maintains that for seventy-five miles from Suakim, at no one point could a force of 2,000 or 3,000 men with their animals find water for their needs. There are two absolutely waterless stretches, after leaving Bir Ariab, of fifty miles each. A large body of men must, then, carry three days' water, twenty days' food, at least fifteen days' forage, and a large amount of ammunition. But, in spite of the difficulties, Mr. PROUT reported to his chief that throughout far the greater part of the distance a railway can be constructed with unusual ease and economy. As to the cost, nothing is said. Iron ties must be used, as the white ants would destroy wooden ones. There is not an ounce of fuel to be had in the country. Surveys must be made as the line advances, involving costly mistakes and tedious delays. But when the road is built the Mahdi is "smashed," and the restoration of order in the Soudan would be quickly followed by profitable and growing commerce. The pipe line is considered impracticable without the railway. In no other way than by a railway can the machinery, pipe, and coal be carried. As the line advances the pipes must stand practically empty until the Nile is reached, and water pumped back.

THE Provincial Art Societies are securing a great many distinguished artists as members. At the election of honorary members of the Leeds Art Association, which was held this week, the following Academicians were selected, viz.: Sir F. LEIGHTON, P.R.A.; Mr. E. ARMITAGE, R.A.; Mr. W. P. FIRTH, R.A.; Mr. J. C. HORSLEY, R.A.; Mr. E. J. POYNTER, R.A.; and Mr. C. W. COPE, R.A. A good deal of prestige arises to a small society when painters of this class are willing to join it, and as it is almost a duty to foster local art, the President and the other Academicians are acting rightly in giving all the aid they can to the cause.

MONDAY, May 4, has been selected for the opening of the International Inventions Exhibition. Last year the Health Exhibition was opened on a Thursday. The first Monday in May is probably the more suitable day, although it is likely to diminish the number of visitors to the Royal Academy.

It is understood that in the upper official world there has been much dissatisfaction with the proceedings at the South Kensington Museum when Mr. MUNDELLA attended to distribute the prizes. Very few students had sufficient self-denial to visit the lecture-theatre, and the number was much diminished before the peroration of the address was reached. The prize-winners were not all in attendance. The speaker was heard with coldness, and at the close Mr. MUNDELLA left the platform rather abruptly. The indifference of the students to the oration has been interpreted as a slight to the Government, and we believe that some foolscap has been expended in the expression of the official annoyance. But a little reflection would have shown that the students were not to blame. Under the best of circumstances the distribution of prizes is not an enticing ceremony, for the addresses are all on one pattern, in which the late Prince Consort, the Exhibition of 1851, the bad taste of the public in days before the Department was constituted, and the danger of foreign competition are the elements. But on Wednesday in last week the distribution was put into competition—and we believe for the first time—with a soirée in the same building. Music and singing and pleasant conversation naturally became the more attractive. "Some one had blundered"; but the organisers of the soirée were not to blame. In other schools of art, when the distribution of prizes becomes the occasion for a soirée, there is not a general flight to witness the ceremony, and why should Mr. MUNDELLA pout when he finds that South Kensington does not differ from Notting-ham, and that young people are no more disposed to hang upon his words in the metropolis than in the provincial town? The affair shows a despotic spirit on the part of the Council, and we hope it will never be tolerated among art students.



## THE WESTMINSTER DIFFICULTY.

THE inquiry into Mr. PEARSON's proposals for dealing with the exterior of Westminster Hall still drags along. So much is said for and against the plans, and the witnesses on both sides are so well balanced, that the members of the Committee would be justified in complaining about the difficulty of their task. Unless they draw lots, there seems to be no way of arriving at a conclusion. But it was inevitable that every one, except the witnesses, should be puzzled in the case. The project is but an archaeological guess, and it seems a pity that so much time should be expended when it is known that, no matter how often they may meet, the Committee will be still in the dark about the original appearance of the building.

It is running a risk to seem to undervalue the efforts which Mr. SHAW-LEFEVRE has made to give a Mediæval character to the exterior of the Hall. But when we consider the kind of masonry that has been made visible, we must say that, with all our reverence for architectural relics, we can see no advantage in keeping the wall before the public as if it were a thing of beauty and a joy for ever. At Westminster the Houses of Parliament are of much more importance, architecturally and politically, than the Hall, and they should be allowed to dominate the position.

The document which we published last week appears to have been overlooked in the discussions on the proposed restoration, but it shows very plainly that from the first the late Sir CHARLES BARRY held an idea which is only partially realised in the existing buildings. In other words, his design has not yet been carried out. It will be seen that as far back as 1836 he proposed the enclosure of New Palace Yard in order to shut out an unfavourable view of Westminster Hall, and urged "that all the entire mass of building forming the Houses and adjuncts be treated in its architectural composition as a single edifice for the sake of unity, public character, and effect." Every one who has had the least experience in dealing with Parliamentary Committees is aware that it is often fatal to a scheme to disclose too much, and in interpreting BARRY's document we must read between the lines. In 1836 there were houses in Bridge Street, and the inconvenience of the Law Courts was not generally acknowledged; it was therefore prudent on the architect's part to secure the erection, in the first place, of the House of Lords and the House of Commons with the offices, and trust to time for the remainder.

In less than twenty years the opportunity arrived for a full explanation of his design. An application was made to the architect in 1853 by the Office of Works, and the reports which followed may be seen in our correspondence page. BARRY proposed, in the first place, that the north and west sides of New Palace Yard should be enclosed, in order that it might form a part of the New Palace as it did of the old, and he wished to have the public entrance where it should be—through an archway at the north-west corner of the quadrangle. St. Stephen's Porch, which is now the entrance, has a sounding name; but it is not in the position where one would expect to find it. It was well known that last year, when the designs for the New Government Offices had to be deposited there, cabmen and railway carriers, who are supposed to be omniscient as regards London, were not all clear as to the whereabouts of the porch. In the second place, BARRY proposed a connection between St. Stephen's Porch and the quadrangle. The exterior of Westminster Hall would be preserved in all its sacredness and gauntness by the arrangement; but it would be masked or enshrined by a range of buildings in keeping with the Houses of Parliament. As there was an open court between the Hall and the building, the masonry could be seen; but it might be safely assumed that a dozen pilgrims would never ask to look at the wall in the course of a year.

Mr. SHAW-LEFEVRE says that the buildings proposed by BARRY are unnecessary, and, if it were requisite to employ a number of expensive officials in order to utilise the rooms, there would be a strong objection against the proposal. But it has been generally supposed that the Government offices are cramped for space, and, unless we are mistaken, if buildings existed in that position they would be certain to be occupied without much loss of time.

It will be asked why Sir CHARLES BARRY's plans for the additions were not carried out when they were brought forward in 1854. Sir WILLIAM MOLESWORTH, who was at the time First Commissioner of Works, said that the buildings would be useful as extra committee-rooms and public offices. "Accommodation of this description is," he wrote, "frequently and suddenly wanted by this department, and, when suddenly wanted, can generally only be obtained by hiring ill-adapted private houses at an extravagant rent, upon which large sums of money must be expended to fit them for official use." Whether the Office of Works has to find accommodation of the kind of late days is best known to the officials. On the score of convenience, it was plain that the buildings would then be an advantage, and whatever may be the capabilities of the existing offices, there are always probabilities of a demand for extra space.

Sir WILLIAM MOLESWORTH, in his recommendation, was not over zealous; for while he reports that the works would "greatly improve the appearance and design of the New Palace, would afford valuable and much-needed accommodation, and ought to be executed if Parliament would consent to vote the requisite funds," he winds up by saying, "but they are not in my opinion indispensable for the completion of the New Palace at Westminster." The concluding words may have been little more than parliamentary tactics to save Sir WILLIAM's own reputation, in case the outlay came under the inquisitorial scrutiny of JOSEPH HUME. It is sufficient for our purpose to take the Commissioner's opinion on a question of accommodation, and, as we have seen, he believed that the buildings "ought to be executed." Where art and architecture were concerned Sir CHARLES BARRY was undoubtedly the better judge, and when he says that the buildings are requisite for the completion of the Palace it does not matter much whether Sir WILLIAM MOLESWORTH did not agree with him.

It is easy to understand that in 1854 there was a fear of undertaking new works. The buildings had been subjected to the criticism of an ignorant public, and, as generally happens with good architecture in this country, the opinion on them was unfavourable. A Minister would naturally hesitate before giving another opportunity for men like Dr. REID to try experiments at the public expense. But the case is now different. In spite of all that has been said against them, the Houses of Parliament form a building of which England may be proud, and the money expended on its completion would be well laid out. A respect for archæology is a commendable quality in a Minister who has to deal with buildings, but, unless we are mistaken, future generations would prefer to see the Houses of Parliament completed rather than the most careful restoration on the proposed lines.

## ANTAGONISM IN ARCHITECTURE.

IT is an old truth in physics that action and reaction are equal and contrary. It may still hold, although so many things in natural philosophy have been set aside or simplified that advanced inquirers possibly are able to demonstrate that there is not the slightest difference between one kind of action and another. The subject we propose to consider is the influence of the principle in architecture, and we think it will be found that action and reaction have played an important part in the art.

We cannot better commence than by taking what may seem to have had very little to do with the subject—we mean the figures which are called caryatids. It was at one time imagined that they perpetuated the cowardice of the Caryans, who supported the Persian invaders, and who were afterwards punished by their Greek countrymen. The placidity of the women who carry the entablature of the Erechtheum, and who reappear in St. Pancras Church, is not, however, suggestive of a forced captivity or of humiliation of any kind.

The legend is, like many others connected with the history of architecture, based on an absurdity, and in books it has been superseded by others which are almost as fantastic. Would it not be more rational to suppose that caryatids are merely the expression of a principle which must have been in the minds of builders from the time that men first emerged from the caves in which they found



refuge? That principle is the stability which arises from the opposition of force to force, or of action *versus* reaction.

Long before NEWTON saw the apple fall, and from the phenomenon announced the laws which keep the stars from tumbling about and causing mutual destruction, builders knew very often to their cost that stones and other materials had a way of falling just as if they were endowed with life. We now interpret every collapse by ascribing it to gravitation, but what that means was as little known to NEWTON as to the builders of Babel. The primitive masons were not possessed of so simple a catchword to explain away difficulties, and a structure was to them something else than a mass of inert matter. When the Arabs say that an arch never sleeps, we have more than a rude attempt at poetry: it is an expression of a belief in a force that must be dangerous if it were not for the opposition of another that was equally powerful. Mr. RUSKIN, in his description of TURNER's pathetic *Téméraire*, suggests that it is the privilege of ships, among the works of men's hands, to be endowed with life in our imagination, but there is no reason why we should not likewise see in a building a thing which has to sustain the brunt of great natural forces, and which exists because it is able to overcome them.

It may be only fancy, but we cannot help thinking that the origin of the use of figures to support a part of a structure arose in a desire to express the opposition of force and the builders' victory. It is only by the aid of organic life that we can do so effectually. An algebraic formula will be more explicit to a mathematician than any work of a painter or sculptor, but in days when the world knew nothing of formulæ something else was needed. As symbolism nothing could be better than a row of figures like those of the Erechtheum. If they resembled the Telamones which are to be seen in Pompeii, they would be suggestive of a colossal weight, which was carried with so much difficulty that Titans were bent beneath it. But as we see that the Greek heroes are shown in battles with the calmest faces, so those Greek girls are perfectly unconcerned under their entablature. The figure in the Townley collection in the British Museum probably supported a Roman building, and may have been a reproduction of a Greek example. It suggests more than passive endurance, for one of the hands is extended as if in the act of discourse. If we like, we can suppose that the lady is laying down the difference between building of a massive and, so to speak, a brutal kind, and building which, by the recognition of what has to be done by the materials, becomes artistic. In the Arch of the Goldsmiths in Rome the caryatid represents a captive, and, therefore, unwilling support; and in some of those designed by MICHEL ANGELO it is difficult to see more than men who have grown weary of their burdens. With caryatids of the kind it is impossible to resist the conclusion that in a short time the weight must overpower the supporters, and to the majority of minds that would be an uncomfortable thought. It is only in cases where a lesson was to be conveyed to the owners of the building that they would be appropriate. COLBERT, for example, who evidently foresaw the effects of the building mania of his master, and who remonstrated in vain against the enormous expenses, might well have ordered unfortunate peasants to be represented as the supports of gateways. But if the Greek architects were only eager (as we suppose) to make all the onlookers understand that a heavy mass had been restrained from falling by their scientific skill, the beautiful figures they had carved were the best exponents of their idea. We see reaction personified in the most pleasing forms.

But without having recourse to sculpture, the Greek architect was able to suggest the everlasting opposition between loads and supports. He did so by his columns and stylobate, and to them we may add, perhaps the triglyphs. Columns, and especially Doric columns, are more expressive of support than a solid wall. Indeed, the wall of the cella seems so unimportant to the popular mind, that it is often difficult to make people realise that it existed. The massiveness of a Doric column was in excess, if we apply no other test than is afforded by a table of the crushing strength of stone. But in architecture a thing should not only be strong, but look strong. The fluting tended towards the expression of strength. No one can give any clue to its origin, but that the flutes imparted an

appearance of strength by the multiplication of the vertical lines, will be evident to any one who compares the upper and lower parts of the Doric piers under the railway bridge over the Thames in connection with the Cannon Street Station. The plain parts of the cylinders look less strong than those which are channelled.

The baseless Doric having been supposed to be an evolution directly or indirectly from the trunk of a tree, it ought to spring directly from the ground. But when that has been done with the fronts of village chapels and other buildings in England, the effect is anything but satisfactory. The stylobate not only gave dignity to the building, but it was apparently more secure as a firm platform than the ground itself. As DRYDEN says, "All below is strength and all above is grace." The limitation to the number of steps was an advantage, for when there are a great many steps with risers of uniform height, as in the Madeleine at Paris, the increase in effect is not proportionate to the increase in the quantity of cut stone. The investigation of the properties of a Doric temple is, however, better adapted for a large volume than for a few paragraphs in an article. We can only indicate a few of the ideas which are suggested when the building is considered in one relation.

In good building of all ages we think that there is sufficient evidence of a desire to express the antagonism between certain parts of the masonry. The boundaries between them have, of course, to be fixed arbitrarily, for caryatids and Doric columns are as subject to the law of gravitation as any part of the entablature which they support. A line has to be drawn somewhere to distinguish crushing from supporting, and according to the way it is done will be the character of the building. When there is no demarcation, as in the cubical blocks which serve for dwelling-houses, then it is difficult to produce a work of art.

The Greek artists made no secret of how their effects were produced, but Gothic architects were rather prone to be mysterious. The saying attributed to WREN when he saw the roof of King's College Chapel, "that if anyone would show him where he was to place the first stone he might construct such another work," would, in spite of its absurdity, be rather flattering to the builders of many of the churches. They endeavoured to excite wonder in the interior by suggesting that the roof was self-poised, or carried by columns of marvellous lightness, and capped with flowers. But on the outside we see another mode of treatment, and a legion of buttresses is a proof of a desire to make the most of the security that was necessary in order to keep the roof in its place. Flying buttresses are in their way as exaggerated as Doric columns, but they serve to suggest an enormous force on one side, and that it was to be withstood only by means of intricate devices.

There are many ways to express the difference between action and reaction in buildings, but they may be resolved into two classes. The first is by a difference in the character of the masonry, the second is by means of projections in one or another form. In modern towns the latter way is difficult to attain owing to the operation of various kinds of regulations. Buildings are from necessity in one plane from the ground to the roof, although the plate-glass in shop-fronts would cease to seem supporting the storeys above if the front could be brought forward for a foot or two. To explain the various ways in which masonry may be contrasted would be to write a description of the best examples of building in all parts of the world.

#### A BELGIAN CANAL PROJECT.

THE ministerial *Journal de Bruxelles* announces that among the works the Belgian Government propose undertaking to improve the canal system of Belgium, a first place is assigned to the project of putting the old city of Bruges in direct communication with the North Sea by means of ship-canal. Its projectors estimate the cost of constructing such a canal at a million pounds sterling, on which they will ask the Belgian Government to guarantee an interest of three per cent. for at least two years. This plan for restoring to Bruges some of its pristine prosperity is rapidly finding favour with many, not merely in Bruges



and Flanders generally, but also at Antwerp, Brussels, and even beyond the Belgian frontiers.

The idea of such a canal originated with, and has been ably advocated by, a Belgian civil engineer, M. DE MAERE-LIMNANDER, formerly Deputy for Ghent in the Belgian Lower House. His plan was originally to connect Ghent as well as Bruges by a deep and broad canal, which would find its outlet near Heyst, a rising seaside resort three miles north of the better-known watering-place, Blankenberghe. The canal from Terneuzen to Ghent renders an extension of the proposed canal to the last-named city a matter of little moment. Meanwhile the canal between Bruges and Heyst, between which places, as the crow flies, the distance is about nine miles, could be easily constructed. The soil is light. Little drainage work is requisite. Most of the country is below the sea-level. Three not unimportant canals converge at Bruges, at the spot where NAPOLEON I. constructed a roomy dock for the gunboats with which he intended invading England. Near this dock it is proposed to excavate a larger one, and to erect suitable warehouses. At the Heyst end of the proposed canal only low and narrow sand-hills would have to be cut through to obtain access to the sea. As the water is deep close to shore, short piers need only be run out to protect the entrance to the canal. As the tendency of the sea is at this point to eat into the shore by the swiftly passing and repassing of the tide, it is thought that there would be no risk of the silting of the canal mouth with sand.

The advocates of the canal aver that this cannot be demonstrated either of Ostend or Nieuport, both of which places have been put forward as proper outlets for such a canal. The opponents of the canal and the Government engineers employed by the late Liberal Government of M. FRÈRE-ORBAN contend that this question of keeping the entrance of the canal clear of those sands which four centuries ago destroyed Bruges' natural harbour has not been satisfactorily demonstrated. But some months ago several eminent English, French, Dutch, and Belgian engineers, unconnected with Government circles in Belgium, met at Bruges by invitation of the civic authorities there, and, after some deliberations and a visit or two to the coast, agreed to report favourably on the scheme. Two other points are also urged in its favour. The canal would be supplied with water entirely from the sea, consequently no drain would be put on the present canal system of Belgium, for which in dry seasons the water supply is somewhat precarious. Again, it is urged that a short line of railway from Heyst to Antwerp would bring London into more direct and rapid communication, *via* Gladbach, with the North of Europe. Some twenty hours, it is calculated, would be thus saved by the traveller between London and St. Petersburg. That, in comparison with such undertakings as the Suez and Darien Canals, or even with the Ymuiden Canal at Amsterdam, the difficulties and cost of the proposed seaport, with canal to Bruges, would be slight may readily be admitted. But the question that those who embark capital in the undertaking must ask themselves is whether it can be made remunerative.

M. DE MAERE, and those who side with him, urge in favour of the canal becoming a paying concern several specious pleas. They point to the present and ever-increasing prosperity of Antwerp—a port which, largely profiting by the piercing of the St. Gothard, now claims the first place among Continental seaports. They contend that as the military stronghold of Belgium, and as its communication with the sea is through Dutch territory, political events might injure even permanently Belgium's unique seaport. They assert, too, on evidence apparently trustworthy, that the depth of water in the Scheldt is diminishing, and that the day must come when Antwerp will be as much an inland city as is Bruges to-day. Lastly, they show that in winter the ice has more than once impeded the trade of Antwerp, and that on each occasion trade has betaken itself to Flushing, to the clear detriment of Belgian commerce. Suppose, they add, a more than usually severe and lasting frost set in, might not the chance that forced the traders to quit Antwerp induce them to establish themselves in the more favoured and open port of Flushing? Holland would reap what Belgium let drop.

It may be doubted if, so long as ships of large tonnage can make their way to Antwerp, that port will suffer a

diminution of its prosperity. Some sixty additional miles of water-carriage would always tell in favour of that city, just as a somewhat similar cause tells in favour of London, albeit there are splendid harbours more westward at Southampton and Plymouth. The political reasons brought against Antwerp hardly appear serious, for that city is to Belgium what the Colosseum is to Rome. When one falls so will the other, and with Belgium would go the Bruges canal.

The passenger traffic between London and the north of Europe certainly argues in favour of a roomy and easily entered harbour on the Belgian coast, and a point near Heyst may be a suitable one if connected by railway with the northern lines at Antwerp. But of what use then the canal on to Bruges? The King of the Belgians, on receiving some time back a deputation in favour of the scheme, recommended the people of Flanders to convert their fields into market-gardens for supplying the insatiable London market with vegetables. Such a plan might perhaps help the Flemish farmers in their present distress, which is rapidly reducing landowners, farmers, and peasants in what was, a few generations ago, one of the most productive countries in Europe to a level with their Irish brethren. A port at Heyst would certainly aid the Flemish in competing for our vegetable supply with people more favoured in clime further away, and who already send us their fruits and herbs through Belgium. But the suggestion made by King LEOPOLD hardly militates in favour of a canal to Bruges. Perhaps a trade may spring up with the Congo to justify its construction and make it a paying concern.

### EUGÈNE DELACROIX.

THE exhibition of the paintings by Eugène Delacroix, in the Ecole des Beaux-Arts, Paris, which was lately opened, has been remarkably successful, one of the best proofs being that several of the ministers and politicians of all parties have been attracted to the Quai Malaquais. The purpose of the exhibition is to raise funds for the erection of a statue of the painter, and it is likely to be accomplished, for over six thousand visitors paid for admission during three days. The collection comprises 239 pictures, sixty-eight drawings in water-colours, besides sketches, studies, &c. Articles on the exhibition have been written by nearly all the principal art critics in Paris, and among others by M. Albert Wolff in the *Figaro*, whose analytical studies of artists always insure attention.

The life of Eugène Delacroix, says M. Wolff, may be summed up in one word—work. His days were spent in his studio, and during the half century between his fourteenth and his sixty-fourth year, he held aloof from the world of Paris. In those days society had not mixed up artists and financiers, the industrious and the idle, for the sake of its pleasure. Every one lived in his own circle. In our time more gossip is written in a few years about an artist than was possible during the fifty years in which Delacroix laboured. He had no desire for notoriety, and his studio was shut against all but a few tried friends. According to his contemporaries the cause of his exclusiveness was that he was proud, haughty, self-contained. Delacroix belonged to a good family, and he kept up his connection with the Faubourg Saint-Germain. Occasionally he might be seen in some select salon, and it could hardly be supposed that a man who had the bearing and smiles of a diplomatist was the painter whose works were full of passion and revolt.

Géricault guessed rightly when, at the first sight of Delacroix, he said that the young artist was destined to become one of the forces of French painting, and this opinion was supported by Thiers in the days when he was a newspaper critic. His first picture of importance, the famous *Bark of Dante*, placed Delacroix in the very first rank among the creative spirits of painting, and henceforth his name was a battle-cry in the contest against the academics and their chilling mannerism. Géricault had thrown down the gauntlet when he produced his immortal *Raft of the Medusa*, and after his death Eugène Delacroix was recognised as his successor in the struggle to bring back French art to reality, or, in other words, to inspire it with life and passion.

The revolutions of art, like those of politics, are never free from excesses, and men pass from one extreme to another. It is natural that the leaders should, in spite of themselves, be sometimes carried away by the excitement of the time, and that their works should be marked by exaggeration. In the exhibition at the Palais des Beaux-Arts this is exemplified. We can see that all that was needed to gain for Delacroix the



highest position among painters was a calm and serene spirit. His life seemed to be a fever. In every work there are marks of the finest temperament and inspiration, but in the majority of them there are shortcomings which abate the impression that was made by the first sight. The works of Delacroix are at once majestic and defective; they excite our admiration by their arrangement, which is always appropriate to the occasion, and by their colour, which is always in harmony with the event; but we cannot help criticising them, and accordingly our pleasure is incomplete.

It very rarely happens that a picture of Delacroix sustains analysis when the momentary enchantment which arises from a first glance is over. The spell is transient. Scenes from sacred and profane history, subjects which have been inspired by great writers, recollections of Morocco, or of dreams, all alike have the glow of a first thought and an equal charm of colour. But when one wishes to affirm that a certain picture is a masterpiece one is arrested by something or other which makes us feel that, if Delacroix is one of the greatest of French painters, there was another artist who was still greater, and that it is Géricault, although he died so young, who holds the first place in the art of the century.

There is only a single work of Delacroix which approaches the grandeur of Géricault's *Raft of the Medusa*. It is the *Entry of the Crusaders*. The two works denote the culmination of French art in this age. The picture is the truest exponent of the genius of Delacroix, a work of thought and handling, worthy of admiration on account of the grandiose character of the legendary figures, and of the landscape which environs them. If we wish to value the painter justly, we must often return to this vast work, to his ceiling in the Gallery of Apollo at the Louvre, or the decorative paintings in the Chamber of Deputies. Eugène Delacroix was above all a man of grand thoughts, and it was in works of this class that he was more in his element than with ordinary easel pictures. Among the latter class there are fine works, but the genius of the artist was restricted by their limits, for it required a large surface to display its fervour. There is an apparent disproportion between the largeness of ideas in his smaller pictures and the size of the canvas.

If he had lived in an earlier epoch Delacroix would have inscribed his art on the walls of churches and palaces like the old masters, whose good fortune it was to belong to an age when painting was recognised as an integral part of architecture, and the largeness of the available spaces gave wings to the painter's thought. We must imagine what he might have been if there were walls and ceilings at his disposal, and regard his easel pictures as if they were the cruel restrictions which had impeded the development of his power.

He was, however, spared from the difficulties of other painters of his time. Delacroix inherited an income of about fifteen thousand francs, and in 1830 to such a man it was a veritable fortune. He was thus freed from the necessity of producing pot-boilers. In the early part of the century painting was not considered in its commercial relations; the romanticists felt they were the torch-bearers, whose mission it was to enlighten the world rather than to make their fortune. Delacroix sold his *Good Samaritan* for 300 francs; now it is worth 30,000 francs. He was paid 1,000 francs for his *Hamlet and the Gravedigger*, and his splendid picture, *The Two Foscari*, brought 2,500 francs. And yet it is recorded that in spite of the price it was difficult to find purchasers for his pictures, for he never condescended to attract the public.

Delacroix may be said to have been self-taught—his art was the result of a loving contemplation of the ancient works in the Louvre, and of a hatred against the style of historical painting which he saw in practice. He was but a short time in the studio of Guérin, and that artist did not conceal his dislike of his recalcitrant pupil. Géricault was the youth's idol; and when Delacroix gained an introduction to him, he was overpowered by the painter's recognition. The request for one of his sketches seemed so great an honour that Delacroix felt as if he had been knighted, and bent his knee when he offered his drawing.

Apart from his art, Delacroix was entitled to distinction. He spoke little, but a vulgarism never passed his lips. In his most intimate correspondence there is always something superior. He was a good listener, and whilst one spoke to him the intensity of his gaze seemed to pierce one's thoughts. He was little accessible to flattery, and disdained attacks. In the midst of the war that raged about him and his works, he alone seemed to take no part. He was like one of those strategists who, in their cabinets, plan battles on paper. With every fresh picture the contests assumed additional violence between the partisans of romanticism and of classicism. As happens in such cases, there was injustice on both sides. Those who denied the genius of Delacroix were as much in the wrong as those who scorned Ingres. Time has allotted to both their true positions. We can now recognise in Delacroix a magnificent colourist, and in Ingres one of the purest of draughtsmen, without running any risk from either party.

There is a close affinity between the genius of Delacroix and that of Victor Hugo. The great writer is a colourist like the great painter. The two men have revolutionised the literature and the painting of their time. They have rescued art from the formulas in which it had been imprisoned; they have restored the connection between the past and the present, which had been broken, and both have been derided for the sake of that conventional art which enabled mediocrity to strut with an air of triumph. Both, however, have had their satisfaction, and have gained renown by the overthrow of their enemies.

But it was not granted to Eugène Delacroix to witness the glorifying of his name—he was without the robust health of Victor Hugo, which defies time. Delacroix was always ailing, and in his studio he was to be found in winter clothing, with a thick woollen muffler around his throat. It may have been from this cause that he was misanthropic. He lived always solitary, whether in his modest *atelier* in Paris, which formed such a contrast with the magazines of rugs and silks where contemporary artists labour, or in his country-house at Champrosay, where he received a few intimate friends. But even to them the private life of Delacroix was hermetically sealed. He had no time for trifling, and scandal-mongers could never make free with his name. He had a foreboding that he was not destined to enjoy a long life, and to filch an hour from his art appeared criminal. Delacroix attained, however, his sixty-fourth year, and the heretic, who was so long excommunicated, had before his death the satisfaction of sitting among enemies in the Institute. Not one vote was solicited by him. The election was owing to the friendly spirit of M. Robert Fleury, and ten years earlier it would have been considered an impossibility. He took his seat as a conqueror.

When we wish to judge of an illustrious artist we must take into account the manner of his death as well as his life, for at the last hour a great spirit often reveals itself with peculiar majesty. It may be said of Eugène Delacroix that his end was worthy of him. His artistic convictions surmounted all the terror of the closing days, and he met death with the loftiness that beseeemed a grand soul. When he felt that he had done with this life, he returned to Paris, in order that he might die in his studio, as if it were a battle-field, and surrounded with the trophies of his hand. There was no complaint heard from him, not even a regret at quitting this world. He sent his housekeeper, who had grown old in his service, to bring a notary, and to him he dictated his last wishes with the utmost calmness and serenity. When the legal formalities were over, he ordered that he was to be left alone, and thus, without a witness, he awaited death.

Now, after twenty years have elapsed, it is proposed to erect a monument to Delacroix. But, if it is to stand in the Place Vintimille, it is to be hoped the project will be abandoned, for it is hardly worth the trouble to have a statue in such a position. The site that is most befitting for a statue of Eugène Delacroix is in the court of the Louvre, near the works of men who were his ancestors in art, and where it would be constantly seen by the young artists of France.

## THE RESTORATION OF WESTMINSTER HALL.

ON Monday last Mr. Shaw-Lefevre, M.P., gave evidence before the Restoration Committee. The late First Commissioner of Works explained the circumstances under which, on the demolition of the old Law Courts, he had instructed Mr. Pearson to prepare plans for the restoration of the west side of Westminster Hall, then for the first time exposed to view. Mr. Pearson's instructions were in general terms, and the plans prepared were the result of that gentleman's inquiries, uninfluenced by any pressure from the Office of Works. It might be considered that the idea of completing Sir Charles Barry's scheme had been given up. As to the possibility of utilising the vacant space for the erection of public offices, according to his view there was no very serious demand for accommodation at the Houses of Parliament that could not be met by a rearrangement of the rooms already existing under the roof of Westminster Palace. If in the future any further considerable needs were apparent, he thought they might proceed in the direction of utilising official residences, and he mentioned the rooms occupied by Black Rod and the librarian of the House of Lords as premises which might be appropriated to the general service of the House. With regard to Mr. Ayrton's statement that the country was paying 37,000*l.* per annum for rent of Government offices, he pointed out that no inconsiderable portion of this sum was devoted to offices in the provinces, and could not, of course, be saved by the provision of further accommodation in London. About 15,000*l.* a year was paid for offices in the West End, including 8,000*l.* for the War Office—an item which would disappear on the completion of the new offices—and the rents



for the offices of the Board of Trade, Charity Commission, and Land Commission, none of which could be conveniently removed to rooms at St. Stephen's. Royal Commissions, he thought, might be accommodated at the House, and by this step 3,000*l.* a year could be saved. It was not, in his opinion, worth while to spend a large sum of money in building rooms for Royal Commissions, as there were committee rooms which could be placed at the disposal of those bodies. The total cost of the execution of Mr. Pearson's plans would be 34,000*l.*, of which 5,000*l.* would go to cover the cost of completing Sir Charles Barry's work in St. Stephen's Porch. Of the 29,000*l.* remaining, 16,000*l.* must be expended under any circumstances, so that for 13,000*l.* they would get two galleries, a large room, and a stand for horses.

### BIRMINGHAM ARCHITECTURAL ASSOCIATION.

THE annual dinner in connection with the Birmingham Architectural Association was held on Tuesday evening, at the Grand Hotel, Colmore Row. Mr. F. B. Osborn, the president of the association, occupied the chair, and among those present were Messrs. W. H. Kendrick (vice-president), V. Scruton (hon. sec.), J. Cotton, A. Reading, F. Cross, H. Collett, F. G. Hughes, F. C. Spencer, J. K. James, D. Cochrane, H. Lloyd, T. F. Newton, J. Pratt, E. Taylor, T. Tonks, F. Camm, Lakin Smith, Hart, &c.

The President proposed the toast of "The Association," remarking that the association was deserving of the most hearty support, as it was the only representative assembly of the profession of the art of architecture in the town, and also on account of the important educational work it was doing amongst students and younger members of the profession. There were many useful classes in connection with the association of a social and pleasant character, by means of which members had opportunities of instruction in architecture which they would otherwise find it difficult to obtain. The association was eleven years old, and he was pleased to say that it was stronger and more vigorous at the present time than it had ever been before. The classes, he understood, were well attended, and the papers read at the meetings were instructive and valuable. He advised young architects to join the association on account of the advantages they would receive; and he also advised older architects to become members for the purpose of giving that assistance to the younger members which it was advisable they should have.

Mr. Kendrick responded, expressing an opinion that the association had a brilliant future before it. He suggested that representations should be made to the Town Council for the establishment of a technical museum for the benefit of the profession, and observed that in the new Art Gallery accommodation might be found for a section devoted to the interests of the association.

Mr. Doubleday gave "The health of the President," and urged that the Post Office authorities should be requested to allow the designs for the new post office to be confined to Birmingham architects.

The President, in reply, said he would endeavour to do all he could during his term of office to advance the interests of the association.

Other toasts were proposed, and were interspersed with vocal and instrumental music.

### TESSERÆ.

**Bramante as an Architect.**

PROFESSOR DONALDSON.

THE predominating principle of Bramante's idea of architecture is breadth. He, therefore, lays down in his composition a great mass. To diversify this, he introduces slightly-projecting orders, which in their whole, as well as their parts, he preserves also small to serve as contrast. These orders are elegantly profiled, though it is to be remarked that they are too much portraits of each other. His openings are also very small in order not to destroy the effect of his mass. These details produce an incongruous medley of nobility and meanness, dry in effect, hard in detail. All the elevations of his palaces appear like neat architectural drawings unshadowed, with the under lines of the cornices and one side of the perpendicular projections marked with a thicker line. His courts, however, are very elegant and effective. There is this great defect in Bramante's buildings, that not one of them is soundly built. All his constructions are falling in some part or other, and only kept together by iron ties put in since his time. The noblest of Bramante's works is the Court of the Belvedere at

the Vatican, where he has displayed much ancient magnificence by means of grand flights of steps, uninterrupted lines of statues, pedestals, and fountains.

### Coignet's Concrete.

CAPTAIN FOWKE.

M. Coignet has, as a series of experiments, given us the recipes for making two kinds of concrete suitable for house building, which he distinguishes by the epithets of economic concrete and hard and solid concrete. The first is composed of sand, gravel, and pebbles, 7 parts; argillaceous earth, 3 parts; quicklime, 1 part. This concrete, he says, properly beaten up and mixed, has given walls nearly as hard as the common soft rubble masonry used in Paris. In price it competes with ordinary pisé work, over which, however, it has the advantage of being able to resist moisture. The hard concrete is composed of sand, gravel, and pebbles, 8 parts; common earth, burnt and powdered, 1 part; cinders, powdered, 1 part; unslaked hydraulic lime, 1½ parts. The materials to be perfectly beaten up together. Their mixture gives a concrete which sets almost immediately, and becomes in a few days extremely hard and solid, which property may be still further increased by the addition of a small quantity, say one part, of cement, and the price, depending principally on that of the time and labour, was in Paris, under unfavourable circumstances, 3½*d.* to 4*d.* per cubic foot; with more favourable conditions, 2*d.* per cubic foot. A house, three storeys in height, 65 feet by 45 feet, standing on a terrace, having a perpendicular retaining wall 200 feet in length and 20 feet high, has been actually constructed with every part, including foundations, vaults of cellars, retaining wall, all walls, exterior and interior, without exception, of this hard concrete (Beton Dur), as well as the cornice, mouldings, string courses, balustrades, and parapets, and without bond iron, lintels, or wood throughout. The use of plaster in the interior is also avoided, as the concrete takes a surface sufficiently fine for papering.

### Buckingham Palace.

F. L. G. VON RAUMER.

Many objections might be made to the external arrangement and proportion, though its extent and the colonnade give it an air of grandeur. But what shall I say of the interior? I have never seen anything that might be pronounced in every respect more of a total failure. I should not care to have a free residence in it, for I should vex myself all the day long at the fantastic mixture of every style of architecture and decoration, the absence of all pure taste, the total want of an eye for measure and proportion. Even the great entrance-hall does not answer its object, because the principal staircase is on one side, and an immense space, which has scarcely any light, seems to extend before you, at the entrance, to no purpose whatever. The grand apartments on the principal storey are adorned with pillars; but what kind of pillars are they? Partly red, like raw sausages, partly blue, like blue starch; bad imitations of marble, of which there is none, standing upon blocks, such as art rejects, to support one hardly knows what. Then in the next apartment no pillars but pilasters—these pilasters without base or capital, and those with a capital, and the bases foolishly cut away. In the same apartment fragments of Egypt, Greece, Etruria, Rome, and the Middle Ages, all confusedly mingle together; the doors, windows, and chimneypieces in such incorrect proportions that even the most unpractised eye must be offended. The spaces unskillfully divided, broken, insulated; the door sometimes in the centre, sometimes in the corner, nay, in one room there are three doors, differing in height and breadth; over the doors in some apartments bas-reliefs and sculptures, where pigmies and Brobdingagians pell-mell together, people from 2 to 6 feet high range admirably together. The smaller figures especially have such miserable spider legs and arms, that one would fancy they had been starved in a time of scarcity, and were come to the king's palace to fatten themselves.

### English Painting in the Thirteenth Century.

DR. E. A. BOND.

In the course of the thirteenth century the arts of painting and of illumination left the cloister and became a secular profession. Warrants for the execution of mural paintings in the royal palaces, from the time of Henry III., show that the artists employed lived by their work, and were not always ecclesiastics. Works of poetry, of romance, and of history began to be freely circulated, and must have helped to establish a large class of illuminators and miniaturists. Books of devotion, too, were more generally in the hands of laymen. A number of minutely-written and compact Bibles are still extant, written from the middle of the thirteenth century, partly, no doubt, for the use of the mendicant friars, but principally, I conceive, for the convenience of students and laymen. The psalter especially, accompanied with the litany, canticles, and prayers, and forming the private service book of the time,



was extensively circulated among the laity; and it was on such manuscripts that the highest talent of the miniaturist and illuminator was exercised. Entries in the royal wardrobe books of the period show that professed painters were employed in illuminating manuscripts for the sovereign; and writers and illuminators were attached to the king's household. With this secularisation of the art painting rapidly threw off the conventionalism of the cloister, and instinctively turned to the study of nature. Up to this time the ornamentation of manuscripts had been architectural in its character. Mouldings of arches and sections of pillared piers were adopted as designs for illuminated initial letters. But from about the middle of the thirteenth century, the forms of foliage and of animals began to be copied from nature. Where a leaf is timidly introduced at the extremity of the border lines springing from the initial letters, we are able to recognise the foliage of the oak, the vine, or the ivy. And when the figure of an animal breaks the stiffness of the ornamental lines, it becomes the genuine portraiture of a bird, a dog, a hare, or monkey, executed with more or less success; or, if a monstrous compound, still designed with a regard to the true forms of its component parts. The study of the human figure and the art of composition were no less attended to, and probably at no other period was the progress of these higher branches of the art so rapid as during the latter half of the thirteenth century.

#### A Sixth Order.

SIR WILLIAM CHAMBERS.

The ingenuity of man has hitherto not been able to produce a sixth order, though large premiums have been offered, and numerous attempts been made by men of first-rate talents to accomplish it. Such is the fettered human imagination, such the scanty store of its ideas, that Doric, Ionic, and Corinthian have ever floated uppermost; and all else that has ever been produced amounts to nothing more than different arrangements and combinations of their parts, with some trifling deviation scarcely deserving notice, the whole generally tending more to diminish than to increase the beauty of the ancient orders.

#### The Church of St. Martin-in-the-Fields.

J. H. BURTON.

The work on which Gibbs's fame rests as the embodiment of a great thought unbroken by partial defects, is the church of St. Martin-in-the-Fields, fortunately opened up to the admiration of the present generation by the works in Trafalgar Square. It was a bold and an original idea, greatly censured in his day as a barbarous combination of two distinct and antagonistic types of architecture, and a rank rebellion against the first Horatian rule of taste. The spire or steeple had been held peculiar to Gothic architecture, and was deemed the natural terminus of the aspiring character of the pointed arch. Yet Gibbs placed a spire on a pediment supported by Corinthian columns. It was, however, no mixture of styles in luxurious confusion like the efforts of the French Renaissance. The edifice in itself was untainted by Gothic, and even on the spire that architecture had no more claim than merely as it was a spire, since its details were carefully and severely Classic. Illegitimate or not it was a great hit in architecture—something like Michel Angelo's mounting the dome in air—and became so prevalent that it is now never deemed an anomaly. For the general merits of the building it may be truly said that it is one of the chief architectural glories of London. Formerly buried in a mass of obscure streets and lanes, its thorough architectural character has been tested by the severest ordeal to which the innate character of a building can be trusted—a general clearing away which lays it bare for all full inspection and either close or distant criticism. To try how it bears this, look first upon St. Martin's and then turn to the costly modern edifice to the right, built as a suitable repository for the artistic treasures of the British Empire.

#### Economy in Scottish Architecture.

R. W. BILLINGS.

The Scottish have always been taken for an economical nation, but they sometimes carried this feeling of economy into most extravagant architectural faults. In general, however, they carried their decoration only so far as it was absolutely necessary. Take one of the pinnacles of Roslin Chapel, for instance. There are three sides in sight, and these, as you know, are richly carved. The crockets are beautifully finished, and not only that, but the face of the pinnacle itself is a perfect network of elaborate detail. Go to the back (the fourth side), and you will find that, where you cannot see it, it is as plain as possible. The same things occur at Melrose Abbey. Economy was the order of the day wherever nothing could be seen. They carried their decoration only so far as it seemed absolutely necessary, but not one jot further. The English never seem to have carried the same feeling into their works, for, in sight or out of sight, the work is all finished in the same way.

Perhaps no nation in the world ever made so much use of simple materials as the Scottish, or have changed so little in the course of ages the staple of their ornamentation. This is a very remarkable feature in the architecture of Scotland, and marks it from every other nation on the face of the earth. Now, for instance, if we look to the use of the bead moulding, you will find, beginning at the columns of the Abbey in Dunfermline, and taking the decoration of windows through all times, down to the era in which you have no architecture (the reigns of George III. and George IV.), that this was the staple of all the ornamentation of the country. Then look at the fine effect on some of the most elaborate buildings in the country by the mere use of the chamfer. The great window in the west front of Dunblane Cathedral illustrates this in a remarkable manner. In many English buildings there is a shower of small mouldings; but here is economy combined with elegance, and a breadth of effect which is the very life of the composition. The west window at Brechin has it even in a still more remarkable degree, because in the window itself the simple mullion does not go through it. It has three stages of simple chamfer mouldings. It is a Flamboyant window, without the intricate mouldings of that style. Another peculiar feature of economy we see in the old castles. When Scotland had done defending its castles with cannon, the gun-holes which perforated these battlements were changed in use, but not in form. They were changed to the use of the opposite element—they were made into water-spouts. The battlements themselves shared the same fate, and were treated even more ignominiously; for when they had done service they were literally turned upside down for ornament, showing that their occupation was gone.

#### Variation in Prices of Paintings.

J. J. JARVIS.

The *St. Jerome* of Correggio was executed by him for a price equivalent to about 200 dols. In 1749 the King of Portugal offered 90,000 dols. for it. When the French had possession of Parma the Duke vainly offered 200,000 dols., or a million of francs, to redeem it from being sent to Paris. Correggio's *Magdalen*, at Dresden, was valued at 27,000 dols. at its purchase with other paintings. A *Holy Family* of Murillo's, in the National Gallery at London, was bought for 31,000 dols. Prince Demidoff, in 1837, at the sale of the Berri Gallery, paid 45,000 dols. for fourteen pictures, one of which, the *Breakfast of Ham*, by Teniers, sold for 4,900 dols. At the same sale Demidoff paid 7,500 dols. for the *Pasturage*, by Paul Potter, 1806. One of the pictures was bought in London for 9,600 dols. The best Ruysdaels are now esteemed at from 5,000 to 6,000 dols. each. A century ago they could have been bought for the tenth of that sum. Ostade's pictures are still more valuable. In 1837 his *Village Dance* brought 4,400 dols. The two famous Claudes in the British Gallery were sold in 1804 for 20,000 dols. each. A good Claude readily brings from 5,000 to 20,000 dols., according to its merit. Rembrandt's pictures are equally in esteem, being worth from 1,000 to 15,000 dols. each. In 1844 two of his portraits brought 3,500 and 4,900 dols. respectively. In 1817 West received 4,000 dols., or 80*l.*, for his *Annunciation*; in 1840 it was sold by auction for 10*l.*, or 50 dols. It would be a curious inquiry to trace the price of celebrated works of art from the time they left their author's studios to the present day. But the above examples are sufficient to give an idea of the varying pecuniary estimation put upon art by dealers and amateurs.

#### Weights on Crowded Floors.

In the course of the discussion at the Institution of Civil Engineers of a paper on "The Construction of Charing Cross Bridge," Mr. E. A. Cowper said he had tried the weight of a number of labourers, by weighing each man individually, and then by measuring the exact space they occupied when standing close together, as in a crowd, when he found their collective weight was fully 140 lbs. per square foot. He was, however, aware that from 60 lbs. to 80 lbs. was often taken as a test load, but that was far below the weight of a crowd of able-bodied men. Mr. Mallet remarked that, during the building of Buckingham Palace, Mr. Nash ascertained the greatest possible load of human beings that could be brought upon a given space, with reference to the so-called fireproof floors of the palace. Within a hoop, he thought of about 20 feet diameter, as many men were caused to stand as could be wedged into it, the last men being lowered down amongst the others. The result gave a load of 120 lbs. per square foot. Mr. Hayter stated that 70 lbs. per square foot was probably the maximum living load that could be crowded on a given space. Messrs. Cochrane & Co. had tried an experiment, selecting for it the tallest and most muscular men in their establishment, and the result proved that the estimate of 70 lbs. was ample. Sir John Hawkshaw said he had been found fault with for assuming so much as 80 lbs. per square foot as the weight of a crowd of human beings. French engineers and others were said to be content with 50 lbs. to 60 lbs. per square foot, but he was satisfied with 80 lbs. per square foot.



## NOTES AND COMMENTS.

THE late actions respecting the picture in which a portrait of M. DUMAS was introduced, and others of the same class, have suggested a subject for a conference of the French advocates. The question debated was whether an artist, who is devoid of any intention of bringing disrepute, can introduce a person's portrait in a picture without authority. It was decided in the affirmative. The French being fond of caricatures as a people, it is surprising that any one should become irritable at seeing a distorted figure of himself or herself in a shop window. It is only in Paris that we could find advertisements from artists connected with the comic papers offering to draw the "charge" of any one who will send a photograph, and is willing to pay for the honour of being converted into a subject for laughter.

A DEPUTATION from the Sunday Society had an interview with the trustees of the National Gallery on Tuesday, in order to explain the advantages of opening the gallery on Sundays. Sir AUSTEN H. LAYARD in replying said that a majority of the trustees were in favour of opening the gallery on Sundays, but they were powerless to carry that inclination into effect. Beyond the questions of religion and cost, there could be no objection to opening the gallery, for there would be no difficulty in accommodating the number of people, however great, who might take advantage of Sunday to become acquainted with works of art. They hoped that Parliament would soon give its vote in favour of the opening of museums and galleries on Sundays, and when that step was taken he could assure the deputation that no time would be lost in giving effect to the decision.

At the Congress of Orientalists in London in 1874 the editing of the "Book of the Dead," which was a sort of Bible to the ancient Egyptians, was, at the suggestion of Herr LEPSIUS, entrusted to M. EDOUARD NAVILLE, of Geneva. It was a most onerous undertaking, for all the museums in Europe had to be ransacked in order to collate the various papyri in which there was a reference to the book. After more than nine years of incessant toil, M. NAVILLE was able in last May to announce the completion of the work to Herr LEPSIUS, the German Egyptologist, through whose influence the Berlin Academy had voted the sum that was necessary for the preliminary expenses, and the Prussian Government had promised to defray the cost of publication. When LEPSIUS died it was feared there would be official impediments to the fulfilment of that promise, but owing to the exertions of Professor DILLMANN, it has been definitely arranged that the work is to appear about the end of the present year. The publishing has been entrusted to the firm of ASHER & Co., of Berlin. There will be two large volumes, one containing the text, with 212 photographic plates. The text will be in accordance with papyri of the eighteenth and nineteenth dynasties, when Egyptian civilisation was at its height. The second volume will give various readings, and is to have 448 plates. There will be an introduction and criticism by M. NAVILLE, and it is needless to say that the appearance of the work will be hailed by scholars.

So many works of PRADIERS are to be found in France, it is not strange that the great sculptor is claimed as a Frenchman. He was born in Geneva, and was proud of his birthplace. At one time he proposed to present a fountain to the city, and modelled the figures on a small scale, but now that the design is needed no trace of it can be found.

THE Book or Ritual of the Dead received its title from the circumstance that copies were deposited sometimes in the tombs with the mummies, and it was even supposed to be a passport to the Aahla or Elysium. Extracts were inscribed on the outer bandages of the mummy. Part of it dates from time immemorial, but the book is supposed to have assumed a definite form about eighteen centuries before our era—a period when the Hebrews were suffering under Egyptian taskmasters. The text is illustrated by drawings, one of which, representing the weighing of actions

in a scale, has been often reproduced in books on Egyptian antiquities. In 1841 a version now in Turin was published by LEPSIUS; but later inquiries have shown that it is but a comparatively recent copy, and the collation of so many papyri by M. NAVILLE will, it is expected, reveal much concerning the faith of the Egyptians. For work of the kind there is much advantage in having photographic processes. In England it is even more essential, for, so far as we know, there are no hieratic or hieroglyphical types in London.

A MEETING of the Western Nail Association was lately held in Chicago, when it was reported that iron nails are being driven out of the market by steel nails. Already one-half of the nails manufactured in Wheeling are made of steel, and the machinery and plant necessary for their manufacture are being erected at nearly every nail foundry. At first there were doubts and objections urged against steel nails. The heads flew off in driving, it was said, and carpenters did not believe they would hold in wood as well as the iron nail. A little more care in the manufacture has obviated the first objection, while experience has shown that the last is wholly groundless. Under present conditions, steel nails can be made cheaper than those made of iron, but the plant is very expensive, and its erection and general adoption will render almost worthless the vast outlay of capital now invested in the old-fashioned nail factories.

It is reported from Rome that in the excavations of the Rue du Statuto a fine statue has been found, which may have represented CERES, as there is a cornucopia. It is of marble, and over three feet in height. With the exception of the base, the whole of the statue is in good preservation. Near it were two bas-reliefs in a similar condition.

THE interminable case relating to the VERE FOSTER drawing-books is once more before the Irish Courts. The dispute arose in 1876. After a long litigation, the Courts decided that Mr. FOSTER was entitled to the lithographic stones which were used for the examples of water-colour painting in the drawing-books. In case they were not all delivered, it was ordered that an inquiry should be made—first, to ascertain specifically the lithographic stones that had been withheld; second, what damage was sustained up to the date of the amended writ; third, what further damage the plaintiffs had sustained. It is now alleged by the plaintiffs that lithographic stones containing designs for fifty books had been given up; and stones containing designs for thirty-five books formed a series known to the trade as "Vere Foster's Drawing Copy-books" had not been given up. The fifty books were uncoloured and the less valuable; the thirty-five were coloured and the most valuable, representing one-half of the money-producing value of the series. Moreover, they had been out of print since March 9, 1881. Between 1878 and 1883 the plaintiffs' firm had sold over a million copies of the imperfect set, the profit on them being on the average over 2% per thousand, and as compensation for the loss by reason of the series being imperfect, they claim 1,000%. In compensation for reproducing stones in place of those detained, they claimed 1,005%. The defence is that the stones have been worn out. The case has not been decided, and when it is said that there are five Queen's counsel engaged, the end may be far off. Is not this one of the cases which seems adapted for arbitration? The subject is as technical as buildings.

BIRMINGHAM is supposed to be a town where business is conducted in the most perfect manner, and an engineering contract entered into by the Corporation might be expected to correspond to a penny with the estimate. But the ratepayers are about to understand that unexpected contingencies can arise in other works as well as in building. In 1881 the Corporation approved of a drainage system for Cole Valley district, of which the cost was estimated at 28,000%. The actual cost is in round numbers 62,000%. If the amount paid for a way leave to owners and occupiers be deducted, there will remain about 55,000% for works alone, or almost double the estimated cost. The additional expense is ascribed to the unexpected discovery of running sand along a great part of the line, at a time when it was too late to divert the course of the sewer.













*A Family Group*

*Wall Decoration*

*By H. F. Hermann.*

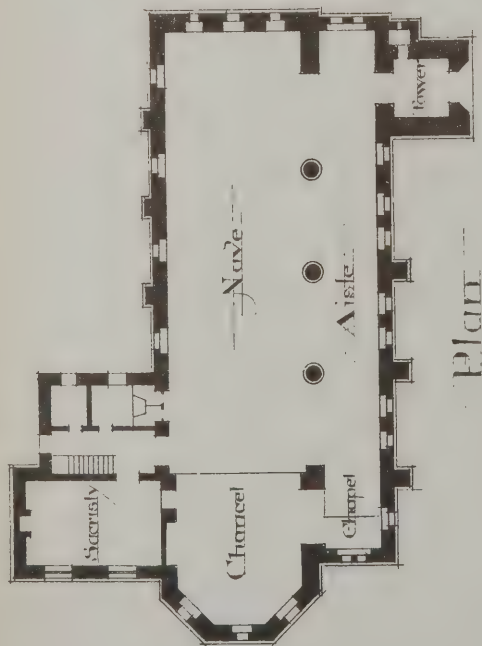




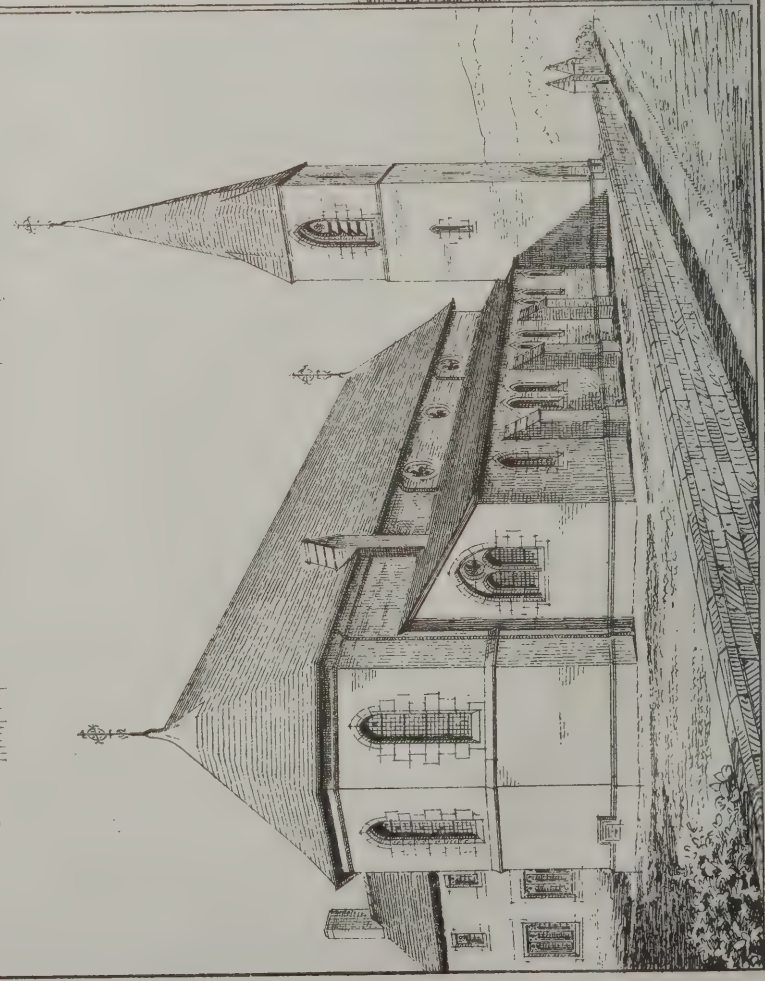




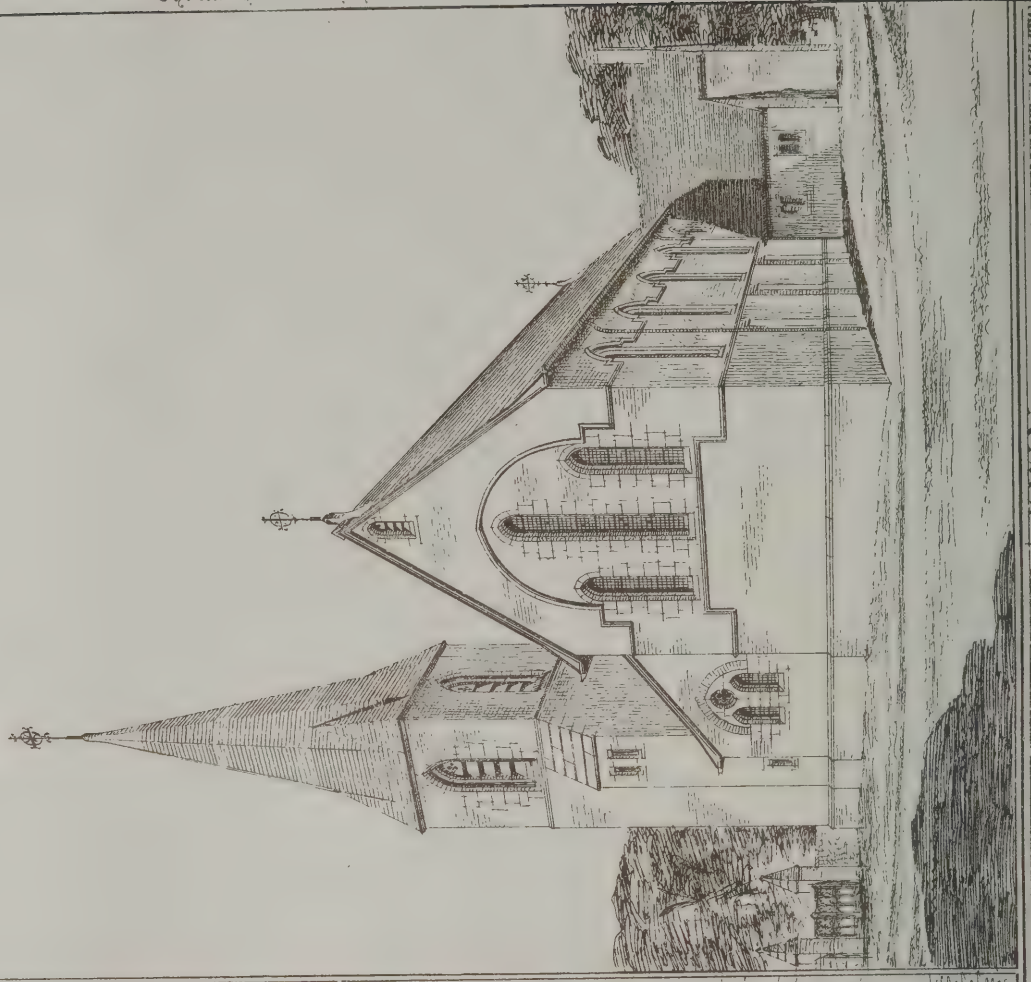




Scale of Feet  
0 10 20 30 40 50 60 70 80 90 100



Perspective Sketch NW View



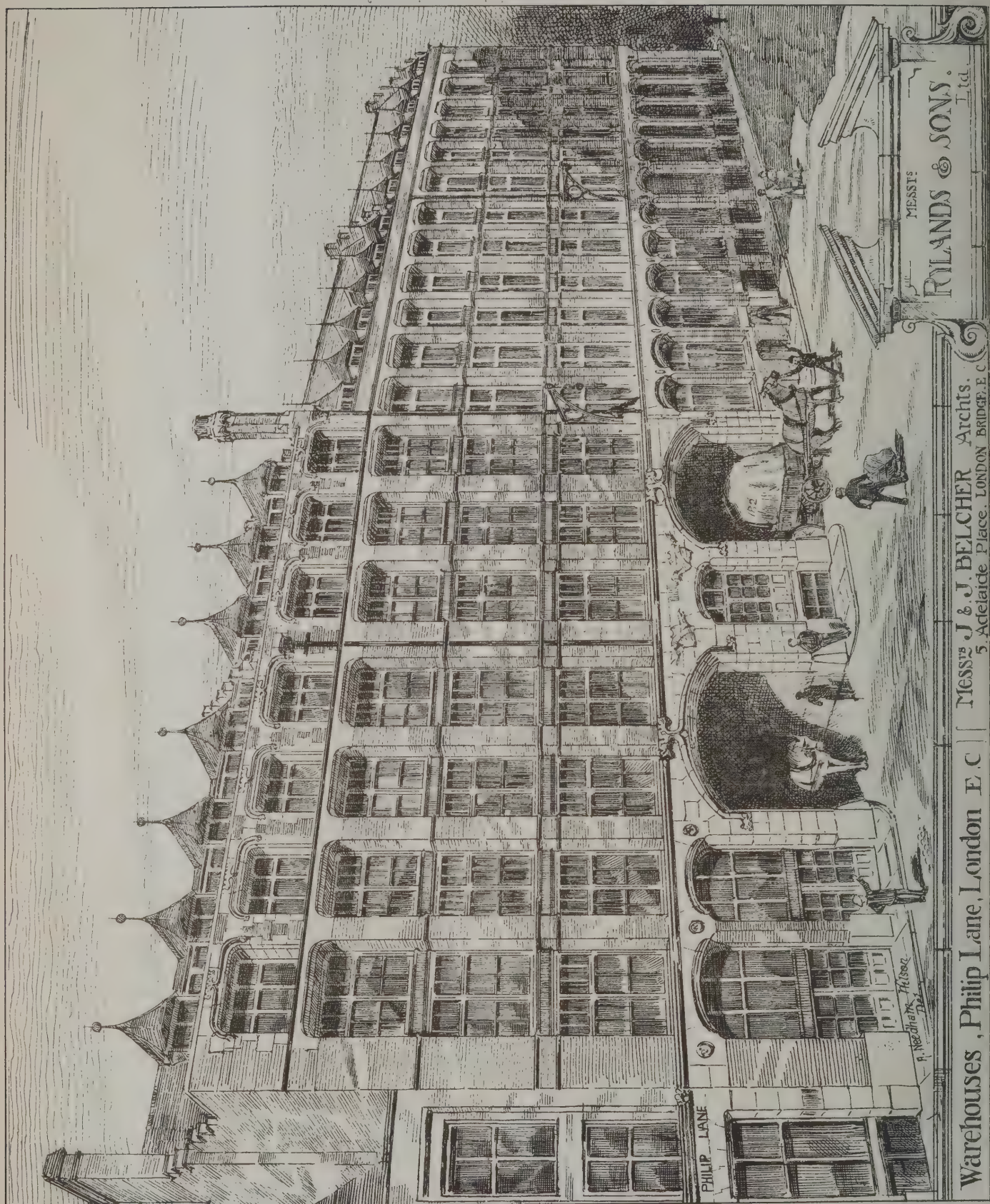
SW View

ST MARYS R.C. CHURCH FLINT J & B SINNOTT ARCHTS













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The Architect March 21<sup>st</sup> 1885.



— NEW WESLEYAN CHURCH, SWANAGE, DORSET —  
Edward W. Jennings, Architect —







## ILLUSTRATIONS.

A FAMILY GROUP.

THIS illustration has been taken from a decorative painting by M. EHLMANN, of Paris, whose fine frieze, *The History of Art*, lately appeared in *The Architect*. The original is in the house of M. ENGEL, in Bale, and fills the space over the chimney-piece. It will be acknowledged that M. EHLMANN'S treatment of the subject shows a wide departure from the ordinary portrait groups by modern painters, and that the artist has accomplished a difficult work by converting an incident in everyday life into something that is idyllic.

WAREHOUSES, WOOD STREET AND PHILIP LANE, E.C.

THE above illustrations show portions of Messrs. RYLANDS & SON'S extensive premises, as re-erected and enlarged since the Wood Street fire in 1882, from the designs of Messrs. JOHN & JOHN BELCHER, F.R.I.B.A. They have been well carried out by Messrs. A. & E. BRAID, of Chelsea.

NEW WESLEYAN CHURCH, SWANAGE, DORSET.

THE Wesleyan church, of which we publish an illustration, is about to be erected at Swanage, Dorset, in order to meet a pressing and long-felt necessity in this town, which possesses so many interesting associations with the early history of the connexion. The success in carrying out the church will have been entirely due to the energy of the Rev. G. TERRY, B.A., who has already distinguished himself in a similar manner in other circuits. The building, which is to accommodate, exclusive of side galleries, upwards of 550 people, presents on the exterior the features mainly of the Flamboyant style, and will be executed in local stone, with Langton stone dressings to buttresses and small windows, while the spire and other portions possessing a greater amount of work will be of either Bath or Ancaster stone. The architect is Mr. EDWARD W. JENNINGS, of Swansea and Bournemouth.

ST. MARY'S ROMAN CATHOLIC CHURCH, FLINT.

THIS illustration shows a new Roman Catholic Church, which has been lately designed by Messrs. SINNOTT, architects, of Liverpool. As is usual in such cases it has been necessary to recognise the fact that little money is forthcoming, and reliance has been placed on form rather than ornament.

ALLERTON, CANNES.\*

ALLERTON, Cannes, Alpes-Maritimes, the winter residence of Mr. John Grant Morris, is situated on a shoulder of the Californie Hills, which form the eastern boundary of the Bay of Cannes, and at a height of nearly 300 feet above the sea. It consequently commands a most extensive view. Directly beneath it to the south are the islands of Ste.-Honorat and Ste.-Marguerite, to the west of which is seen the whole extent of the Bay of Cannes, broken only by the harbour and the fortifications of the old town. Behind the harbour rises the long range of the Esterel Mountains, and beyond again in clear weather are seen the pale blue lines of the hills about Toulon. To the left, from the upper floors and the higher parts of the grounds, there is a fine view of the Bay of Antibes and the snowy mountains beyond Nice.

The house stands in a property of about seven acres. In front of it the gardens fall rapidly to the main road, and behind they rise and finish in a wild and rocky pine wood, which entirely protects the house from the north and east winds. The angle bay of the drawing-room is placed so as to command the most striking view of the bay and old town. The porch is on the north, and behind the drive winds round the hill to the stables seen to the right of the house in the perspective view. The whole of the walls of the house are of a very hard blue-grey limestone from the Vallauris quarries, built without regular joints or beds. On the northern and eastern sides they are lined with a thin brick wall and cavity. The whole of the dressings are of Arles stone, all moulded and carved in position. The floors throughout were constructed with small rolled iron joists, and brick arches levelled up in concrete. In every case the bricks used were the light hollow bricks from Ste.-Henry.

A difficulty having arisen about the roof covering, slates from this country were specially sent out, both for the house

and stables. The floor of the loggia, vestibule, and hall is in marble mosaic, executed by Messrs. Burke & Co., of Newman Street, London, and of Paris; and a Carrara marble staircase leads up to a first-floor corridor, also paved with marble mosaic. The floors of all the rooms are of polished parquet. The windows are furnished with louvered shutters, mostly of wrought iron, so arranged that they fold into recesses in the jambs and mullions when not in use.

The contractor for the work was M. Caisson Ainé; Mr. Thomas Lowe, an English plumber, being engaged to carry out the sanitary arrangements under the direction of the architect, Mr. Alfred Waterhouse, A.R.A., the sanitary materials being sent out from England.

## THE ABERDEEN FREE LIBRARY.

THE Building Sub-committee of the Aberdeen Free Library have been inquiring for the most eligible site for the new buildings. The conditions are that the site should be as near to the centre of the town as can conveniently be arranged; (2) that it should, if possible, be ground either unoccupied by houses, or having on it houses of so little value that the cost of their removal would not be expensive; and (3) that it should be such as to permit of the library building being extended at a future time, without the necessity of purchasing valuable property.

It is calculated that provision will have to be made for 40,000 volumes. With this number of volumes as a basis, the following calculations will show the space required for the various requisites of the library, viz.:—(1) For the Lending Library, a room, say 60 feet by 70 feet. (2) A magazine-room, 60 feet by 40 feet—if newspapers to any large extent are procured, the dimensions of this room would require to be increased in proportion. The two rooms just mentioned might be on the same floor. (3) The Reference Library, which would require to be larger than the Lending Library, say 60 by 90 feet, would occupy the upper floor. Beside it might be (4) a smaller room, 60 feet by 20 feet, for containing the specifications of patents, newspaper files, and the like. In addition to these rooms, space would have to be found for a vestibule, a staircase, a librarian's room, a committee-room, a large working-room for the routine work of the library, lavatories, storage and heating apparatus, &c. To provide for all this accommodation, the building would require to be 150 to 160 feet in length, and 65 to 70 feet in width.

Three sites were suggested, one at the east of Gray's Art School, a second near Robert Gordon's College, and a third on the east side of Union Terrace to the north of the footbridge. On a careful consideration of the whole circumstances of the case, the sub-committee are decidedly of opinion that the last-named site is the cheapest obtainable, and in every respect the most suitable for the library.

## THE WASHINGTON MONUMENT.

THE construction of the Washington Monument was begun in the early summer of 1848, by the Washington National Monument Society. The structure, as designed by Robert Mills, was an obelisk 600 feet in height, with a very flat apex, surrounded at the base by a pantheon, with a peristyle of marble columns 100 feet high.

Shortly after the commencement of the work, the height of the obelisk was reduced to 500 feet, and the building of the pantheon deferred to some future date. The foundation of the obelisk as constructed was 80 feet square at the bed of foundation, and this bed was placed 7 feet 8 inches below the general level of the ground about the structure. The foundation was 23 feet 4 inches thick, and was 58 feet 6 inches square at its top. It was built of large pieces of bluestone gneiss, put in the masonry as they came from the quarry, the interstices between the masses being filled with spawls and a mortar composed largely of fat lime and sand.

The shaft was commenced 55 feet 1½ inches square at the base, with walls 15 feet thick. These walls had a facing of large-grained white marble, in blocks of 2 feet rise and from 18 inches to 15 inches thickness, sawed without reference to the quarry-bed, and rubbed smooth, and a backing of blue gneiss-stone rubble. The walls as constructed contemplated a finished height of 600 feet for the shaft.

By the year 1854 the obelisk had been built to the height of 152 feet, and by 1856 some four feet more were added, making the height of the marble shaft 156 feet 4½ inches. At its top the sides averaged 48 feet 9½ inches in length. The well in the interior was 25 feet 1 inch square. The axis of the shaft leaned 1¼ inches to the northward. The thickness of the walls at the top was 11 feet 10⅝ inches. The weight of this obelisk and its foundations was some 31,152 tons, and the cost of the structure about 300,000 dols.

\* See illustration published last week.



On January 19, 1877, the Washington National Monument Society conveyed by deed all their property, easements, rights, and privileges in the monument to the United States, but no further work was done towards continuing the obelisk until 1878. Work was commenced upon the strengthening of the foundation, to the end that the obelisk might be completed to the height of 525 feet. This consisted in enlarging the area of the foundation by digging away 70 per cent. of the earth under the old foundation, and to a depth of 13 feet 6 inches beneath it, and replacing this earth with a mass of concrete extending 18 feet within the outer edges of the old foundation, and 23 feet 3 inches without the same line, thus giving a new foundation 126 feet 6 inches square, and enlarging the area of the foundation from 6,400 square feet to 16,000 square feet. To distribute the pressure of the shaft over this new foundation, the old rubble-stone base was torn from under the walls of the shaft, and replaced by a concrete underpinning extending out on to the new concrete slab. In this work 51 per cent. of the cubical contents of the old stone foundation was removed, and 48 per cent. of the area of the shaft undermined.

The work of strengthening the foundation was completed on May 29, 1880, and as finished the new foundation is 36 feet 10 inches in depth, and extends down to a level 6 inches below the permanent level of water in the site upon which the work is situated. The work of building the obelisk was commenced on August 7, 1880, the old shaft having first been reduced to a height of 150 feet; the masonry of the obelisk was completed December 6, 1884.

As finished the monument is 555 feet 5½ inches in height, the shaft being 500 feet 5½ inches high, and the pyramidion or apex 55 feet. The shaft as completed is 55 feet 1½ inches square at the base and 34 feet 5½ inches square at the top, where the walls have a thickness of 1 foot 6 inches.

Owing to the thinness of the walls of the shaft in their upper portions, additional care was taken in the construction of those parts, and between the levels 440 and 452 galvanised iron clamps were freely used. From the level 452 to 500 the walls are entirely of marble, of through-and-through blocks, and from the level 470, where the ribs of the pyramidion begin, the several courses are secured to each other by mortises and tenons cut in the builds and beds of the several stones.

The pyramidion is built entirely of marble, and its covering slabs are but 7 inches in thickness. Each of these slabs rests upon projections on the marble ribs. These ribs are twelve in number, three upon each side of the well, and spring from the interior face of the walls at the level 470. They are then carried upward, until the ribs nearest the angles of the shaft meet in the hips of the pyramidion, while those in the centre of each face are connected still higher up by voussoir stones, forming two arches intersecting each other at right angles. The thrust of a corner rib is transmitted to its opposite by the use of horizontal stones between their upper extremities. The weight of the pyramidion is 300 tons. The pyramidion is composed of 262 separate pieces of marble, containing 3,764 cubic feet of dressed stock. Marble slabs are fitted as shutters to the nine openings in the walls of the pyramidion.

The elevator columns of the iron framework were built to the level of 517 feet, permitting the elevator platform to be raised to the top of the shaft, while the four outer columns supporting the landings were terminated in the 500-foot platform.

The height of this shaft is slightly greater than nine times the width of the base. Its width at top is five-eighths of the width of the base, and it would come to a point at a height two and two-thirds its present height.

The walls of the new portion are faced with a fine-grained white marble from the Beaver Dam quarry in Baltimore County, Maryland, and backed with granite from several of the New England quarries. The courses are uniformly 2 feet in rise, the blocks of a wider bed than their rise, and the bond, the Flemish, alternate header and stretcher. The marble is very strong, fine-grained, and durable, and weighs 178½ pounds to the cubic foot. The walls at the level of 160 feet were reduced in thickness to 8 feet 7 inches, but from that level are carried up plumb on the inside, giving a well of 31 feet 5½ inches square.

An iron frame, supporting a staircase and elevator machinery, is carried from the floor to the top of the shaft. The weight of the structure is as follows:—

|  | Tons.  |
|--|--------|
| Weight of foundation and earth upon it . . . . .     | 36,912 |
| Weight of 150 feet of old portion of shaft . . . . . | 22,373 |
| Weight of new portion of shaft . . . . .             | 21,260 |
| Weight of pyramidion . . . . .                       | 300    |
| Weight of iron frame . . . . .                       | 275    |
| Total weight . . . . .                               | 81,120 |

It is quite certain the pressure upon the bed of foundation nowhere exceeds 9 tons per square foot, and is less than 3 tons per square foot near the outer edges of the foundation.

The lightning-conductors consist of a metal tip upon the

apex, connected by a copper rod with four other copper rods passing to the upper extremities of the four wrought-iron columns supporting the elevator machinery. The bottoms of these columns are connected by copper rods with the water in the well in the centre of the foundation.

The cost of the work to the present date is as follows:—

|  | Dollars.     |
|--|--------------|
| Expended by the United States . . . . .                  | 887,710 31   |
| Expended by Washington Monument Society, about . . . . . | 300,000 00   |
| Total . . . . .  | 1,187,710 31 |

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### THE RUINS AT CASHEL.

THE picturesque ruins on the Rock of Cashel, in the county Tipperary, have been restored by Mr. T. N. Deane, under the Commissioners of Public Works in Ireland, but the injury was allowed to go too far. The following interesting account of the remains was written by the Dean of Cashel, Dr. Cotton, in 1846:—

Almost every person who has cast his eye over any history of Ireland must have felt some degree of interest in the far-famed Rock of Cashel; and those who have visited the spot have generally found themselves well repaid by a view of the venerable ruins, towering proudly over the small town, which owed its trade, and indeed its very existence, to the religious and regal establishments anciently connected with that rock.

It is not surprising, therefore, that a considerable sensation was created throughout Ireland about three months ago, on seeing in the public papers a brief and not very intelligible announcement, that "the Rock of Cashel had fallen!"

To those persons who are totally unacquainted with the locality of Cashel, it may be necessary to state that the real "Rock" is an elevated, detached mass of stratified limestone; conspicuous for many miles around, more especially in the directions of north and west. The tradition of the neighbourhood reports that it was deposited in its present bed by Satan, who had bitten it out of the mountain range called Sliabh Bloom, in the northern part of the county Tipperary, at a spot where a large gap is still to be seen in the outline of the ridge, which is universally known by the name of "The Devil's Bite." St. Patrick, the titular saint of Cashel, observing the fiend flying over with this heavy mouthful, compelled him to drop it where it now remains, and forthwith consecrated it to pious uses.

It might, perhaps, be thought rather unfortunate for the credit of this story that the mountain from which this "bite" was filched is not composed of limestone. But that trifling circumstance was overlooked in times when geology was not so fashionable a study as at present; and surely, whether the change was brought about through the power of the saint, or from the natural heat of the carrier's stomach, it only makes the *miracle* the greater, and adds dignity to the tradition.

Upon this rock has been erected at different periods—(1) a round tower, which is still entire; (2) a small, but beautiful stone-roofed church, of what is usually called the Norman style of architecture, built in the early part of the twelfth century by Cormac M'Carthy, King of Desmond, or South Munster, and still familiarly known by the name of Cormac's Chapel; (3) occupying the whole space between those two buildings, and, as it were, embracing them, stands the larger church or cathedral, which was erected about the year 1169 by Donald O'Brien, King of Limerick. The Round Tower and Cormac's Chapel are built of brown gritstone, which must have been brought from a distance of six or seven miles; the cathedral, of Pointed architecture, is composed of the limestone of the neighbourhood.

There are also upon the rock the remains of another later building, generally supposed to have been the common hall of the vicars-choral; and at a small distance from the church, on the south-west side, stands a curious cross, formed of gritstone, judged to be coeval with Cormac's Chapel.

The ecclesiastical establishment at Cashel shared the vicissitudes of fortune common to all parts of Ireland during several centuries, in which the old annalists represent the country as being in an almost perpetual state of warfare. Churches and monasteries were generally considered to be the depositories of valuable property, and therefore became special objects of pillage to the contending parties. The annals of those times are thickly studded with quiet, pithy notices, such as "the



church of — was plundered"; "the monastery and church of — were burned."

It is recorded that Cashel underwent *one* of those frequent visitations from a very singular motive. An Earl of Kildare, in the year 1495, set fire to the cathedral; and coolly gave as his reason and justification, "that *he thought the archbishop was in it at the time.*"

Cashel, being likewise a regal residence and important military position, was often exposed to sieges and hostile attacks. The rock, which in some parts is naturally almost inaccessible, was strongly fortified by art. The walls of the cathedral were thick and solid; and at its western end, instead of the usual long nave, great western door, and ornamental window, there was built a massive square guard-tower of great height, resembling the fortified castles which are common throughout the kingdom. This contained a large, high, vaulted apartment, having no exterior windows, and a small and strong entrance. Over this vault, and approachable only by stairs within the thickness of the walls, of width barely sufficient to admit a single person, was the chief state-room or hall; and above this were some smaller apartments, with a roof surmounted with battlements and a parapet. A few windows, of various shapes and irregularly placed, gave light to the upper portions of the building.

It is beyond question that this tower was erected for purposes of defence, and probably it was always furnished with a garrison. The latest period at which we have any account of hostilities taking place on this spot, is the year 1647, when it was besieged by Lord Inchiquin and the parliamentary forces, and after a severe bombardment was taken by storm. The buildings suffered much damage from the cannonade; and after the capture of the place, the victors blew off the roof of the cathedral with their cannon. The western tower, which was directly exposed to Lord Inchiquin's battery, was greatly shaken. A large crack, running from top to bottom of the centre of its western face, and which has been distinctly visible during a great number of years, may perhaps have originated in some settlement of the foundation, but probably was much enlarged by injuries received on this occasion.

After the troubles of the Commonwealth had passed, the choir of the cathedral was used for divine service, and so continued till the year 1749, when Archbishop Price, being desirous that the parishioners should have a place of worship less exposed to storms of wind and more accessible to the aged and infirm, caused St. John's Church, within the town, to be made cathedral as well as parochial, and transferred the congregation to that church.

Since that time, "the old Rock" (as it is called by all the people of the neighbourhood), has been left to itself. The Round Tower still stands in its simple dignity, uninjured. Cormac's Chapel has suffered comparatively little damage, except from the lapse of time and some injudicious "adaptations" made while it was garrisoned by troops. But the "cathedral," having become roofless and exposed to the weather of all seasons, has owed its present condition of tolerable integrity chiefly to the solidity of its walls and the goodness of its masonry.

The debris of the roof had accumulated to a great height within the church, burying beneath them tombstones, fragments of windows, capitals, corbels, &c., and, being covered with long waving grass, presented a sad picture of desolation. Some years ago this rubbish was removed; the whole place was cleaned; the level of the original floor was reached; the bases of the four fine pillars supporting on arches the central tower were exposed to view; and the just proportions of the edifice were shown. Some interesting tombstones also were uncovered, but the greater part of them were broken in pieces. However, the fragments were carefully collected, and joined together as well as circumstances would admit.

The lower stone-roofed vault in the western tower, having had its few apertures closed up, had become a chamber of darkness. Not a soul resided on "the Rock." The memory of their forefathers, who had been slain by Lord Inchiquin's troops, was still fresh and festering in the minds of the townspeople, and the spirits of the dead were believed to haunt the scene of their former struggles, in confirmation of which belief strange noises were reported to be heard at night, and mysterious glimmerings of light were occasionally seen to issue from the deep recesses of the western tower.

About twenty-two years ago, when, in the process of clearing away the accumulation of rubbish which disfigured all parts of the church, I came to remove the heap which lay on the floor of this vault to the depth of several feet, I unconsciously interfered with this traditional tale. Not that I encountered ghosts, or any hostility from them; but, concealed under the rubbish, I discovered the remains of a *coiner's forge*, coals, cinders, &c., and have some of the base metal found there in my possession at this day.

Here was a pretty *éclaircissement* of a long-believed legend! Here we had one of the thousand instances in which superstition is befooled by knavery, and the credulity of the un-

reflecting masses of our countrymen is traded on by unprincipled adventurers. At the very time when those forgers of base money were encouraging the religious alarms of the inhabitants of Cashel, they were carrying on their thievish trade uninterrupted, and probably were daily trafficking and cheating those very people with that counterfeit coin.

It had long been observed that the crack in the western tower was widening, and appeared to threaten a serious rupture. At length, on the morning of February 22, 1848, a violent storm of wind so shook the building that the tower parted in two from top to bottom, and the southern portion fell to the ground with a terrific crash. The excellence of the mortar which had been used in the building was now shown most conspicuously. The wall fell in large masses, several of which still remained firmly cemented together (as is seen in the fallen tower of Conway in North Wales, and in the ruins of many other ancient castles in Ireland and England). Many stones were broken in two pieces by the shock, each piece remaining firmly imbedded in its mortar. One large mass, ten or twelve feet in length and four or five feet high, which includes part of the parapet, and therefore must have fallen from the greatest height, appears to have glided down without turning over or altering its position, and now stands upright and entire in the churchyard, immediately under the spot which it formerly occupied.

By this accident the interior of the lower vault and of the hall above it is exposed to view from the south. A small but rather elegant window in the upper part of the building has been destroyed; and the heavy masses of stone in their descent overwhelmed the projecting southern porch, which, together with a guard-room over it, has been almost totally demolished.

All this mischief was not done at the same moment. Part of the building fell several hours before the rest, and having thus loosened the general bond of cohesion, prepared the way for a second fall, and many of the adjoining portions now appear to hang together so loosely and imperfectly that still further damage may be expected to follow, unless timely means be taken to prevent such a misfortune.

As might naturally have been expected, the most lively interest was excited throughout the neighbourhood. Thousands flocked to the spot as soon as the news of the accident was spread abroad; great sorrow was expressed; tales of all sorts were told; the prophecies (always abundantly to be had in Ireland when wanted) were raked up for the occasion. People could not help noticing that the day of this disaster was the day on which the Revolution in Paris broke out; and somebody immediately recollected an ancient prophecy of some wise man or woman, declaring "that there would never be a successful rebellion in Ireland till the Rock of Cashel fell."

## BUILDING IN LEEDS.

THE Building Clauses Committee of the Leeds Town Council have issued the report of Mr. D. Hainsworth, inspector of buildings, for the year ended October 31 last. The total number of plans presented to the committee was 1,668, of which 1,340 were approved and 328 rejected. The total number of buildings shown in the plans was 4,487, of which number 3,780 were approved and 707 rejected. In the preceding year 1,626 plans were presented, 1,294 being approved and 332 rejected. The number of buildings shown upon such plans was 4,502, 3,935 being approved and 567 rejected. Twenty-four miscellaneous plans were presented, in respect of two churches, three additions to churches, three chapels, two additions to chapels, one mission-room, one addition to mission-room, five schools, six additions to schools, and one addition to the Yorkshire College. During the present year 1,030 houses had been completed and certified for occupation; also 1,101 miscellaneous buildings had been completed and certified. During the year 1883, 1,007 houses were completed and certified for occupation; also 1,245 miscellaneous buildings were completed and certified. There had been one conviction during the year for infringement of the law.

## COLOUR DECORATION.\*

I WILL now, with your permission, without going into the subject too deeply, briefly describe some of the general principles which hold good in any scheme of colour decoration, and in doing so I must waive any claim to originality for the statements made, as the information has been chiefly culled from the works of Owen Jones and Chevreul, whose treatises on colour are still considered standard authorities. It may be assumed in the first instance that the decorative arts have their origin in architecture, and that they should, if used properly, be associated and allied with it. In order to secure true

\* From a paper by Mr. W. H. Thorp, architect, read at a meeting of the Leeds and Yorkshire Architectural Society.



beauty, which is largely dependent upon the satisfaction which the cultured mind feels in the contemplation of any work of art, it is necessary that all decorative arrangements should possess due proportion, fitness, and harmony, which are productive of repose.

Another maxim, familiar to all of you, which is equally applicable to architecture as to the decorative arts, is that a design should be first constructed and afterwards decorated—the reverse process never being resorted to. We are told that on the question of general form beauty is produced by lines growing out one from the other in gradual undulations without excrescences, and that the design, when completed, should be so arranged and distributed that nothing could be added to it or taken away from it without impairing its general effect. Attention having been paid to the general form of the design, it may then be elaborated by means of subdivisions, and the spaces filled in with ornament, these being again further subdivided and enriched, the ornament based upon a geometrical construction.

A true proportion must always exist in every assemblage of forms used throughout the decorative arts, the whole and each individual number being a multiple of some simple unit; and it will be found by actual experience that these proportions increase in beauty as they are more difficult to detect, the more subtle ratios being more pleasing than the simpler ones. The harmony of form to be found in a design depends upon the balancing of the straight, inclined, and curved. A practice which obtains in Oriental work, and is equally applicable to work of all periods, is that in surface decoration there should be a parent stem, from which all lines should radiate, and that ornaments should never be detached, but should in all cases be traced to their parent stems and roots.

As an application of the foregoing rules we will take a modern piece of wall-paper of good design, well covered with ornament of the type commonly known by the name of an all-over pattern. In looking at it in the first instance we notice that breadth of treatment and harmony of tone which is productive of repose, and gives us thereby a sensation of beauty. It is only when we approach nearer and examine it more closely that we observe the principal features of the design, and are enabled to analyse it into its constituent parts. We shall then by careful examination probably notice the construction of the design, and detect the leading lines from which the lines of lesser importance are evolved and radiate. The geometrical construction of the design now being exposed, it is easy to see by what means the general proportion of form has been obtained, and how the whole and each feature is a multiple of some simple unit. If breadth of treatment is aimed at, the straight, inclined, and curved lines will be so balanced in due proportion one to the other as to avoid horizontality of effect on the one hand, and verticality on the other.

It now only suffices to notice how the constructive lines are enriched and the interstices filled in with ornament, the same rules applying to the lines of the ornament as to the constructive features of the design.

Natural forms, such as flowers and foliage, where used for ornament, should not be reproduced as nearly approaching the originals as possible, but they should be conventionalised in their general forms and outlines, in such a manner as to suggest the objects they are intended to represent without impairing the unity of the design in which they are introduced. In all the best periods of art this precept has been obeyed; and where a tendency towards a copyism of natural objects in their exactitude exists, it is indicative of a decline from previous standards of excellence.

In the development of form colour is a valuable adjunct in lending its help for the purpose of distinguishing objects, or portions of objects, one from the other; and it is also of assistance in obtaining the desired effect of light and shade. To obtain these results the primary colours should be used with a sparing hand in small quantities, and they should be balanced by a more liberal use of the secondary and tertiary colours spread over larger surfaces. There are three primary colours—namely, yellow, red, and blue—and these, when used in equal intensities, will harmonise with one another in the proportions of three of yellow, five of red, and eight of blue. The secondary colours are combinations of the primaries, namely, orange, purple, and green; and the tertiaries—citrus, russet, and olive—are compounds of the secondaries. Both the secondaries and the tertiaries, where used together, must, as well as the primaries, be applied in such proportions as will harmonise or neutralise each other. When mixed with white each colour has a variety of tones, and when with black or gray a variety of shades. By admixture with other colours in addition to white, black, and gray, each colour has a variety of hues, and each of these has its numerous tones and shades.

It is desirable that when a full colour is used in contrast with another of a lower tone to increase the volume of the latter proportionally in order to balance the former, and when a primary tinged with another primary is contrasted with a secondary, the latter must have a hue of the third primary.

When moulded surfaces are decorated with the primary colours, blue, which recedes, is most suitable for concave surfaces; yellow, which advances, for the convex; and red, the intermediate colour, for the undersides; white being used in the vertical planes to separate the colours.

One or other of the primary colours, either in its natural state or in combination with some other colour, should be present in every composition; and in every decorative arrangement the colours should be blended in such a way as to result in perfect harmony and rhythm.

According to Chevreul, if you place two tones of the same colour in juxtaposition, the light colour will look lighter and the dark one darker; also, when two different colours are placed side by side, they each are modified in two different ways, firstly as to their tone (the dark colour appearing darker and the light one lighter), and secondly as to their hue, when it will be noticed that each is tinged with the complimentary colour of the other.

In any coloured design on a white ground the colours will appear darker, and if on a dark ground they will appear lighter.

Vivid colours should never be allowed to impinge upon one another, but they should be separated by lines or belts of colour of a neutralising tendency.

A practice which obtains in decorative work of Oriental origin, where coloured ornaments are drawn upon a ground of a contrasting colour, is to separate the ornament from the ground by an edging of lighter colour.

Where ornaments in any colour are used on a gold ground, it is well to emphasise the ornament by outlining it with a darker edging; and where ornaments of any colour are used on grounds of any other colour, they may be separated by edgings of white, gold, or black.

In the case of coloured ornaments or designs in gold being used upon white or black grounds, they do not require to be outlined, and this rule holds good when a light tint, shade, or tone of colour is used upon a ground of the same colour. Another rule which I have found to work well from experience, and I will conclude this section of my paper. In any scheme of colour of wall decoration, for example, it is well to keep the darker shades of colour for the lower portions of the walls, and let the colour get lighter as you ascend towards the ceiling. Avoid top-heavy effects. Avoid the use of too large a variety of colourings productive of parti-coloured effects, which are conspicuous by their absence of repose. Some of the most successful examples of colour decoration have been produced by the simplest means. Where possible try and repeat the prevailing tints of the dado and wall surface in connection with the colours of the frieze, cornice, and ceiling. They must be used in a subordinate capacity, but when introduced with artistic judgment they fulfil the object of binding the whole of the design together, and produce the breadth, unity, and rhythm of effect which alone can give us that æsthetic satisfaction which the contemplation of a beautiful work of art produces in our minds.

We have now arrived at the last portion of the subject which has engaged our attention this evening, and mention must be made of a few recent examples of decorative work, with some reference to modern materials of an artistic character which may be applied as useful adjuncts in the carrying out of schemes of colour.

We will take in the first instance, as an example, a residence in the neighbourhood of Leeds, in which I was engaged to design the decorations of the entrance hall, corridors, staircase, and dining-room. The drawing-room and library had already passed through the decorator's hands, the decorations being elaborate in character, of a modern French type. The house in itself is a plain stone-built residence, with some recent additions, possessing no special claims upon attention with regard to its architecture—its characteristics being more of the Classical than the Gothic school. My client's tastes leaning towards elaboration of treatment, it seemed best to adopt the Italian Cinque-Cento style of colour decoration as a basis to work upon.

We will commence with the dining-room, a large oblong apartment, well lighted at the end by a projecting bay of several lights. The plaster-work of the ceiling was completed, and comprised the usual cornice with two or three orders of enrichments and an elaborate ornamental flower in the centre. A grate enclosed within a dark marble chimneypiece was in position, and these must not be disturbed.

The first thing to do was to divide up the wall surface into three divisions—dado, intermediate wall space, and frieze; the dado and upper wall surface being separated by means of a carved walnut surbase moulding, and the frieze from the wall below by a brass picture rail and two or three horizontal lines of strong colour and gold.

The dado was then covered with "Lincrusta-Walton," which, as you will all be aware, is a species of linoleum with patterns in relief stamped upon it. The pattern selected in this instance was a kind of Italianised linen-fold panel arrangement, which



was painted a bluish-grey, the vertical lines of the design being emphasised by means of a little gold.

The next surface to treat was the intermediate wall space between the dado and frieze. As it was intended to cover nearly the whole of this wall with large oil paintings, and knowing the value of a good background, I followed the example set at the Royal Academy and Grosvenor Gallery, and had it painted in shades of Indian red with a purply bloom. A diaper design, somewhat after the manner of those decorative hangings and altar frontals, as seen in the pictures of Paolo Veronese and other Italian artists, was introduced, the pattern being in a light shade on a darker ground. This was effected by means of stencil-plates, and was touched up by the hand afterwards. To meet the wishes of the head man of the decorative staff, who had seen considerable experience with Messrs. Crace, of London, by the adoption of an ingenious process a tapestry effect was given to the ornament.

In the frieze a running design, in which festoons, medallions, shells, and cornucopia were introduced, was adopted, the ornament being painted in a brown-pinkish red, relieved with gold upon a delicate grey-blue ground, the two prevailing colours repeating to some extent in paler tones the colours of the dado and wall surface below. These colours in stronger shades were repeated in the cornice, and neutralised together by lines of grey and cream white, and a liberal use of gold.

The ceiling must next be described. It was in the first instance divided into three compartments, the middle one containing as its chief feature the plaster centre-flower. The compartments were divided one from the other and from the cornice by broad belts of ornament, knots of fruit and foliage, banded together with ribands painted and shaded in French grey on a pale-russet ground, forming the central design of the bands. Each compartment was again sub-divided into further geometrical divisions, and their borders ornamented by strings of husks, shaded in pale grey-blue upon a purple madder ground. In each of the end compartments, three panels, and in the central one, four panels, were singled out for elaborate decoration, and were filled in with arabesque compositions of a Renaissance character in various colours enriched with gold upon a cream-coloured ground. The subordinate panels were treated as before with a cream-coloured background overspread with a conventionalised olive-spray pattern; the leaves painted a grey neutral green, and the berries in low-toned reds.

Leaving the dining-room, the entrance-hall, corridors, and staircase must next be noticed. In all of these departments of the house the treatment of the wall surface was the same. The surbase mould, or chair rail, was dispensed with, and the division between the dado and the upper wall space marked by a band of ornament in cinnamon browns and blue shaded with grey on a dark red ground, enclosed within line borders of red, brown, and gold.

The wall surface, like that of the dining-room, being in demand for pictures, was painted a salmon-hued Venetian red in plain colour, without any ornamentation; whilst the dado below was covered with a geometrical pattern in two shades of sage green, divided up with gold lines.

On account of the want of height prevailing in these portions of the house, a very narrow frieze was only permissible. This was ornamented with a repeated pattern of semicircular medallions, filled in with radiated readings in blue-grey on a dark brownish-red ground, and the spandrels between treated with conventionalised foliage in brownish-pink on a saffron ground, the whole being enclosed top and bottom with lines of dark red, brown, and gold.

The decoration of the hall and corridor ceilings is of a very simple character, and yet, in spite of its simplicity, it is the most pleasing example of colour in the house. Above the cornice a border runs round the ceiling, with a vellum ground, and ornamented with a continuous spray of olive; the leaves a greyish-green and the berries crimson. The central spaces of the ceilings were then covered with a geometrical pattern of rather intricate design, the prevailing colours being cinnamon brown and gold upon a vellum ground.

The decoration of the staircase ceiling slightly differs from the foregoing, the geometrical pattern being of a different design, and its prevailing colour a blue grey instead of cinnamon brown, the background being vellum as before.

If in a former part of my paper I could not see my way to recommend very strongly the use of glazed materials for exterior application to buildings, there is no drawback to stand in the way of my warm advocacy of the merits and capabilities they possess for interior decoration.

There are two firms whose success in this particular department of work places them in the first rank, and gives them a premier position over other makers who are endeavouring to follow in their footsteps—viz., Messrs. Wilcock & Co., of Burmantofts, and Messrs. Doulton, of Lambeth.

By permission of Mr. James Holroyd, of the former firm, I am enabled to give you descriptions of two or three enterprises of importance where this material has been successfully used, and has called forth a large amount of admiration. It

has been in large demand for hotels, clubs, and restaurants, on account of its pleasing decorative effect, combined with its cleanliness and capacity for reflecting light, and it is in some of the best known resorts of this class in London that it is to be seen to the greatest advantage. Among them may be mentioned the Auction Mart Restaurant, First Avenue Hotel, Yorkshire Grey Restaurant, new dining-room at the Liverpool Street Station, and the Circus Restaurant. It has also been applied with success in the lecture-hall and the new dining-room of the St. James's Hall, London, and is to be introduced largely in Milling's new restaurant, Bear Lane, in the same city, and in Manchester the new Victoria Hotel will owe some of its interior decorative effects to the adaptation of this useful material.



#### Completion of the Houses of Parliament.

SIR,—Under your column of "Bygones," I see you have reprinted last week my father's original description—written in 1836—of the principles in which he had conceived and laid out his design for the New Palace at Westminster, which gained for him that great work. It is interesting to see by comparison with the work as executed, how persistently he kept his original ideas and arrangements in view during the many years the work was in hand.

It will be equally interesting to your readers and only fair to Sir Charles Barry to add his reports, written in 1853 and 1854, and made to the then First Commissioner of Works, Sir William Molesworth, since in it he gives his proposals of how the building ought to be completed on the land side when opportunity should permit.

He therein gives his opinion as to the fitting treatment of Westminster Hall as a part of the great building, a matter of interest at this moment, when a committee is sitting and considering a different and (as I venture to think) an unsuitable and inharmonious treatment.

This proposal by Sir Charles is contained (with illustration) in a Parliamentary paper, No. 333, of June 21, 1855, of which I have the pleasure to enclose you a copy.

I Westminster Chambers : Yours obediently,  
March 16, 1885. CHARLES BARRY.

The following letters, extracted from the Parliamentary paper referred to in Mr. Barry's letter, will explain the consistency of the late Sir Charles Barry :—

Old Palace Yard, December 19, 1853.

SIR,—In compliance with the instructions contained in your letter of August 18 last, relative to the works required for the completion of the New Palace of Westminster, I beg to inform you that I have given the subject much consideration, and I now enclose a plan illustrative of the additions which I deem to be necessary for completing this great national work in a fitting and proper manner.

I propose, as the plan demonstrates, that New Palace Yard should be enclosed on the north and west sides, and thereby form part of the New Palace as it did of the Old Palace at Westminster, and that the principal entrance for the public should be at the north-west corner of this proposed new quadrangle; that the new building forming the west side of the quadrangle should be continued southwards until it joins the existing building of St. Stephen's Porch, thereby forming a façade to St. Margaret Street and Old Palace Yard, with the convenience of a covered footway throughout the whole extent of it. By means of these additional buildings, the irregular, disjointed, and incongruous character of the present building on the land side would be removed, and a degree of unity would be given to the New Palace on that side in harmony with that already obtained on the river side, and the principal entrance to the Palace would then be a marked and important feature of the building. The effect of these additions also would be to appropriate to useful purposes the waste but valuable space which now not only produces no effect in itself, but injuriously affects the appearance of the New Palace. I now proceed to enumerate the purposes to which the additional buildings might be appropriated, under three heads, as requested in your letter.

1. With reference to the transaction of the business of Parliament, the proposed buildings might contain extra committee-rooms, which, notwithstanding the great number provided in the existing building, have been, and are likely to be,



to a greater extent than heretofore required during busy sessions of Parliament. They might also accommodate several of the public offices, afford rooms for commissions, official residences (if considered desirable), and other accommodation required for Government purposes. Accommodation might also be provided at the south-west angle of New Palace Yard for the stabling and State coach of the Speaker, &c.

2. With respect to accommodation which, although not necessary for the transaction of the business of Parliament, has hitherto been provided for in the Palace of Westminster, namely, the Law Courts, I beg to state for the accommodation of these courts, at least twelve in number on one floor, and lighted from above, together with adequate accommodation for the judges, for counsel, and for the public, the space which could be appropriated for the purpose would not be more than one-fourth of that which would be requisite. The present Law Courts are insufficient in number and size, and some of them, which are only temporary, are placed in upper floors, where they are found to be extremely inconvenient. The rooms for the judges, for the bar, for juries, and for the public generally, are also insufficient in number and size, defective in the mode of lighting, and ill-arranged. In short, the want of space in the present Law Courts, and the inconvenience of their locality, are loudly and very generally complained of.

3. The alterations in the vicinity of the New Palace that would be consequent upon the additions proposed to be made to it, and the erection of the New Westminster Bridge, would be the entire removal of the block of houses on the south side of Bridge Street, and of the Law Courts buildings on the west side of Westminster Hall; and for the sake of the effect of the New Palace as a whole, in conjunction with Westminster Abbey; the removal of St. Margaret's Church, as recommended by a Committee of the House of Commons, would be highly desirable.

The amounts of my estimate of the cost of the several proposed additions to the New Palace under heads as requested, are as follows:—

|   |          |
|---|----------|
| 1. Building on the north side of New Palace Yard  | £67,295  |
| 2. Building on the west side of New Palace Yard, including the entrance gateway                                   | 79,052   |
| 3. Building forming the centre of the fronts towards St. Margaret's Street, and southwards to St. Stephen's Porch | 102,594  |
| 4. Building in the proposed new quadrangle of New Palace Yard, west of Westminster Hall                           | 13,994   |
| 5. The Speaker's stables, &c.   | 3,266    |
| 6. Alterations of the front of Westminster Hall   | 12,085   |
| Total   | £278,286 |

The buildings comprised under the heads No. 3 and 4 could not be erected until the Law Courts are removed from their present situation.—I am, &c., (Signed)

T. W. Philipps, Esq.

CHARLES BARRY.

Westminster, June 28, 1854.

SIR,—In reply to your letter of the 10th inst., I beg to acquaint you that I was induced in my report to the Board of December 19 last to take the view I did of the Board's requisitions of August 18, 1853, in consequence of having already furnished estimates, which have been submitted to Parliament, of the cost of all the works which have been sanctioned in respect of the New Palace at Westminster.

Having now, in compliance with the request contained in your letter of the 10th inst., made a careful estimate of the works still to be executed in completing the New Palace, as far as its design has been already sanctioned, I beg to acquaint you that it amounts to 280,272*l.*, a detailed abstract of which I send enclosed. If this amount be added to the amount of the estimate which I forwarded to the Board on December 19 last, for works proposed but not yet sanctioned, together with an allowance of 25,000*l.* for the cost of raising the roof of Westminster Hall, and of various alterations consequent thereon which was not included in that estimate, the Board will be in possession of the gross estimated cost on March 31, 1854, of all works, sanctioned as well as projected, for completing, fitting, furnishing, decorating, and rendering fit for occupation the New Palace, including the architect's commission and all other incidental charges, amounting in the aggregate to 583,557*l.*

The gross amount of the cost incurred on March 31, 1854, for works already executed at the New Palace at Westminster, including fittings, fixtures, furniture, and decorations, as certified by the architect, and including also his own commission and all other incidental charges, amounts to 1,583,289*l.* Thus, taking into account other amounts already expended on the works, and the estimated cost of works sanctioned, as well as those which have been proposed in further extension of them, the total cost of the New Palace would not exceed the sum of 2,166,846*l.*—I am, &c., (Signed)

To W. Philipps, Esq.

CHARLES BARRY.

Westminster: July 12, 1854.

SIR,—I have to acknowledge the receipt of your letter of the 6th instant requiring information as to the time that would be requisite for the completion of the whole of the works sanctioned, as well as projected, in the New Palace at Westminster, upon the assumption that a vote were taken for the full amount of my estimate of the cost of these works, and no delay occurred in issuing the funds required for that purpose.

If that further portion of the site, now covered by the houses on the south side of Bridge Street, could, as it possibly might, be cleared and obtained within two years from the present time, and if the sittings of the Law and Equity Courts at Westminster could be discontinued, and the site of them cleared and obtained within the next twelve months, I am of opinion that the whole of the works of the New Palace might be brought to a close within four years and six months from the present time, and that an annual expenditure of about 120,000*l.* might, upon an average, be safely and profitably incurred upon such works during that period. As, however, the site of the projected building on the west side of New Palace Yard, proposed for public offices, &c., is now available, that portion of the proposed addition to the New Palace might, if commenced immediately, be completed and rendered fit for occupation within two years and six months from this time.

I have ventured to suppose it possible that the sittings of the Law and Equity Courts at Westminster could be discontinued upon the assumption that those sittings might in future be held in the City and Lincoln's Inn, until the great question of the final location of those courts is determined upon and the requisite accommodation provided for them.—I am, &c.,

(Signed) CHARLES BARRY.

T. W. Philipps, &c.

#### Arsenic and Architects.

SIR,—It seems that I incautiously provoked Sir E. Beckett to pen a trenchant letter on the poisoning of church rats and church-goers with arsenic. My reply not having appeared, it has been surmised that he "has come off first best in the encounter," which left him fully armed, and master of the field, in the *Times* of February 21. It must be confessed he had the best of it in respect of time and chance. And his letter has been quoted in other papers. But "he lives to fight another day," for somehow the opportunity of receiving any response to the sarcastic challenge which he valiantly threw out to me, or to other architects who might be supposed to be implicated in the use of arsenic under floors, was not there vouchsafed to him. The sarcasm, in good truth, becomes amusing when he supposes that I necessarily advocate or even defend the use of arsenic, if I venture to suggest a little scientific study as to its application, not for his own sake, but for the sake of his brother chancellors; and this, whether he considers most of them, or only a few, to be noodles like the whole body of architects. The study would certainly lead them to prefer its use, even "in solution from a watering-pot," beneath a well-constructed floor, to their having it in constant contact in wall-papers, carpets, curtains, or clothes. But, at the same time, it would unquestionably teach them that it ought on no account to be used unless effectual precautions are taken against its coming into contact with moist vegetable matter, such as timber or fungoid growth in a damp or insufficiently ventilated space, and notably so beneath a church floor—rather a crux, perhaps, in some instances. The affinity of arsenic to hydrogen is so strong as to produce dangerous results in the shape of arsenical vapour, which is, I believe, many thousands of times more injurious than an equal quantity of arsenic in any other form. I ought to add, I have never specified or recommended its use in any of my works. I have made use of ground lime and lime wash, sulphate of iron and sulphate of copper. Corrosive sublimate is by many persons considered the best preparation for surface application. All these are free from the special dangers inseparable from the use of arsenic. The charging of wood under a vacuum, as suggested by him, is quite another matter. But for this purpose copper and iron will be as good as zinc; and even zinc, while preserving softer wood charged with it, has failed in the case of oak. But this is not the contention here.

As to Sir Edmund's useful little book on building, he need not be afraid lest architects should estimate it at less than its true value. But he is much mistaken in supposing that they have any fear of its being likely to supersede their office or their art. The old proverb that "when a man becomes his own lawyer, he has a fool for a client," has been found quite as true in, and just as applicable to, the case of a man becoming his own architect. An architect commonly prefers even a contract to come under the control and responsibility of the lawyer. Still, even lawyers, like doctors, cannot always treat their own case successfully. They are apt to be too sanguine and self-confident as to the correctness of their own opinion. And men who have acted as their own architects have been found to leave



ample scraps for the builder and the surveyor, not to mention the lawyer; but to produce uncommonly little for the artist.

Your obedient servant,

WILLIAM WHITE, F.S.A.

30A Wimpole Street, W.

#### The Floral Hall Exhibition.

SIR,—In your notice of exhibits in *The Architect* of 7th inst., you say the whole of the stone in the spire of St. Peter's Church, Bournemouth, was from the Corsham Down quarries of Messrs. Stone Bros. I shall feel obliged if you will, in fairness, correct the same by stating that the base and top part of this spire, to the extent of over 2,000 cube feet, was built from the Monk's Park Bath stone, of which quarry I am exclusive proprietor, and was specially selected on account of its great weight, carrying, and weathering properties. The gate piers and entrance is also from the same quarry.

Yours truly,

Bath: March 17, 1885.

ISAAC SUMSION.

SIR,—We wish to correct an inaccuracy in your last week's notice of our exhibit at the Architectural Exhibition, wherein you say that the "whole of the stone in the spire of St. Peter's Church, Bournemouth, is of Corsham Down, from Messrs. Stone Bros. quarries." We have, however, been informed to-day by the builders that the 7,166 cube feet of Corsham Down we supplied for this spire was not the *whole* that was used but *three-fourths* of it, a neighbour of ours having supplied the remaining fourth. You will much oblige us by inserting this correction in your next issue.

Yours truly,

Bath: March 13, 1885.

STONE BROS.

#### Sedimentary v. Igneous Building Stone.

SIR,—Mr. J. Slater's paper, and Mr. H. Travis' letter, in your issue of 14th inst., should surely convince architects who look to anything beyond the momentary appearance and present lower cost of the buildings they erect, that true economy and their clients' best interests demand the use of stone that will resist the ravages of the vitiated atmosphere of our manufacturing towns and cities, in most of which all over the country may be seen buildings (erected some of them but a very few years) with arrises, mouldings, and projections quite eaten away or crumbled to dust. The proper material for all buildings intended to last twenty years and upwards is granite, as it is also the most beautiful. It can be used either as random rubble—facing or solid, according to cost of conveyance from quarry—with cut granite dressings; as rough or rock-faced coursed work, or in dressed form, "picked and margin draft," "axed," "fine axed," or "patent axed," according to height from eye or money that can be spent. Then in addition to mouldings (which should be as far as possible bold rather than intricate), the architect has polishing at his disposal for ornamentation, as for pilasters, plinths, columns, &c. For good effect in the two latter I refer him to the new Post Office, Belfast, which we have just completed. He can also gain the effect of carving at a fraction of the cost by incising deeply on polished surface, and the effect in friezes, bands, caps, &c., is exceedingly good.

Briefly, in the hands of an architect who will take the trouble of studying the material, granite is capable almost of anything both in effect and cost. If you desire it, I will have a little town hall, just being completed here, photographed for you to show the simplest form of granite building in combination with some of the more expensive; and if any of your readers are really desirous of taking the matter up practically, and make trial of granite, I will be glad to give any advice or answer any questions on the subject. Some years since I advocated its use in your columns, after visiting the United States and seeing the magnificent granite buildings there. And on a more recent visit I found the use of granite rapidly extending. Let some of your subscribers go out there for their holidays this spring, and they will become as warm advocates of granite *v.* everything as—Faithfully yours,

THOS. M. H. FLYNN.

Bessbrook Granite Quarries, Ireland.

**The Patent "Premier" system of wood-block flooring** of Messrs. Geary & Walker, of 7 John Dalton Street, Manchester, has been adopted for the new Industrial Museum of Science and Art Buildings, now being erected in Edinburgh under the superintendence of H.M.'s Office of Works, Edinburgh. It has recently been laid at the new Bromley and Beckenham Joint Hospital; H.M.'s Post Office, Leeds; Bodega, Birmingham; St. Patrick's Training College, Dublin; Macclesfield parish church; basement to offices, Liverpool; cotton mill, Ashton; church at Middleton; The Uplands, Brighton, for Mr. P. A. Taylor, M.P.; church at Exeter; church at Crewe; schools at Swindon, and other places.

## LEGAL.

### Belper County Court.

Before JUDGE WOODFORDE.

KENT *v.* MANNERS.

ARCHITECT'S FEES.

The plaintiff in this case was an architect living at Derby, and he sought to recover twelve guineas from Wm. Manners, of Cotmanhay, Ilkeston, for work done in the preparation of plans and specifications. There was a set-off for 18s. 6d. which was not disputed. The plaintiff prepared some plans for building operations and alteration to premises. Evidence was given showing that the work was reasonably charged for, and that the plans were worked upon to some extent. Defendant's solicitor denied this, and called upon witnesses to show that the plans were not used, as they arrived too late. His Honour said he did not think the plaintiff should have his brains picked for nothing, and gave a verdict for 7l.

## CHURCH BUILDING AND RESTORATION.

**Farnworth.**—A meeting of parishioners has been held for the purpose of approving designs for the formation of a baptistry in the parish church, the erection of a new font, and also of designs for a stained glass window in the baptistry and the erection of a reredos. The vicar said that the plans had been approved by Chancellor Christie upon the condition that they were submitted to and approved by a meeting of the vestry. He then submitted the plans of the font, which had been designed by Mr. R. K. Freeman, F.R.I.B.A., of Bolton. The font will be of Gothic design, in harmony with the pulpit, and it is proposed to carve it from Alderley Edge stone. Dr. Kershaw intended to place the stained glass window in the baptistry in memory of his wife. The reredos had also been designed by Mr. Freeman, and would be placed in the chancel at the expense of Messrs. William, Samuel & George Coope. It, like the other furniture and appointments in the church, would be of Gothic design, and be made of English oak, unvarnished, and would be a great acquisition to the chancel. The whole of the plans met with the approval of the vestry, and were ultimately adopted.

## SCHOOL BUILDINGS.

**Edinburgh.**—During the last three years the School Board have built and opened the following schools:—North Merchiston, Warrender Park, Causewayside (additions to), and Stockbridge (gymnasium, also used as a class-room)—total accommodation 2,138, and the cost 21,704l. 8s. 4d. A new school is contemplated on the old infirmary grounds for 1,060 children. In connection with the High School, the Board have commenced the erection of a gymnasium and new lodge for the janitor. The designs for these additions are thoroughly in keeping with the rest of the existing buildings, and in preparing the designs the architect has taken care to preserve the amenity of the surroundings. The Board have also arranged to provide a swimming bath by utilising the present lodge of the janitor, which will be done at comparatively little cost. The estimates already accepted by the Board for these additions and alterations amount to 2,198l. 15s. 3d., and it is calculated that, after adding for fittings, painting, architect's commission, and extra work, &c., the total expense will be under 2,800l. The cost of providing fifteen new schools—being the total number completed at this date—has been 173,671l. 4s. 11d. Of that sum 38,664l. has gone for sites, and 135,007l. for the erection and furnishing of the buildings. The cost per scholar, exclusive of site, at eight square feet per scholar, has been 9l. 12s. 7½d.; or at ten and nine square feet, respectively in the juvenile and infant departments, the figures at which accommodation in the Board schools is calculated, 11l. 12s. 9½d. Adding the cost of the new writing class-room at the High School (1,735l.), the total money expended on buildings since the School Board came into existence has been 175,406l. 4s. 11d.

## ARCHÆOLOGY.

**Roman Sculpture in Lincoln.**—A sculptured stone has been recently discovered on the site of the new school of art. It consists of a block of coarse-grained local oolite, 3 feet 2 inches high, irregular in texture, and ill-adapted for fine work, although durable as a weather stone. It finishes with an abacus, 4 inches thick, of a Roman character, having a simple leaf enrichment cut upon the moulding. The sides are covered with flowers and foliage, boldly carved. The front angles are arris beaded, and the back levelled off to stand in front of a plain surface; it has not been built in a wall. The draped figure is in a very fair preservation, except the abacus, the face, and the cornucopia (which are mutilated); the feet, the right



hand and its emblem are destroyed; the nude portion of the right arm and the left hand are dilapidated and wasted by the action of the weather. The figure seems to have been youthful, judging from the remains of the right cheek and the ringlets that fell upon the shoulders. The terminal of the cornucopia and a portion of its upper end are intact: whatever was held in the right hand seems to continue behind the knee, and its stem appears between the feet. The attitude of the figure, seen from the full front, is graceful and dignified, the treatment of the girdle and costume so skilfully and truthfully arranged as to suggest a study from life. The delicacy of the workmanship, too, is remarkable considering the unsuitable nature of the material. In some respects this figure slightly resembles the caryatides from the front of the Pandrosion, of which the corner ones are a pair, the right knee of one and the left of the other being prominent, conveying an air of stability. The same effect is produced in the Lincoln example by gathering up a portion of the robe, thereby emphasising the contour of the limb; the tuck of the garment passes under and over the girdle, the remainder is undisturbed, and enwraps the figure's left side, leading to the inference that it stood at that corner of the erection. The sculpture shows a young female, bearing a cornucopia upon her left arm; this is symbolical of Ceres, and a representation of that goddess seems to be intended. The block was probably one of a pair or more of caryatides supporting a slab or other superstructure; the abacus is isolated, and did not intersect a similar moulding upon the abutting wall.

**Stratford-on-Avon.**—The Ancient House, date 1597, a building of great interest to all visitors to Shakespeare's town, has of late shown signs of decay, the beam carrying the upper floors having given way. The whole of the ground-floor front has been taken out, and a new front more in character with the old work has been put in, consisting of strong oak mullions and transoms filled in with lead work. The front removed was about 80 or 100 years old. Mr. T. W. F. Newton, of 7 Waterloo Street, Birmingham, was the architect.

## GENERAL.

**The Prince of Wales** has fixed the date of the Costume Ball of the Royal Institute of Painters in Water-Colours for Tuesday, May 19. His Royal Highness has signified his intention to be present, and will be accompanied by the Princess of Wales and Prince Edward.

**The "Ansidei Raphael"** has arrived in London from Blenheim, and will shortly be exhibited at the National Gallery.

**Messrs. Heywood Hardy and Charles Robertson** were elected Associates of the Royal Society of Water Colours on Monday last.

**Mr. F. Holl, R.A.**, has completed the portrait of the Bishop of Peterborough. It will be exhibited this year at the Royal Academy.

**Raphael's "Madonna di San Sisto,"** in the Dresden Gallery, has been subjected to a cleaning process, consisting in the complete removal of the old varnish and the substitution of new. There has not been interference with the original colours. Titian's *Tribute Penny* has been similarly restored; but an increased brightness of colour has been noticed in some spots, which may have been caused by a diminution of the quantity of varnish.

**The Exhibition** of the works of the late M. Bastien Lepage was opened in Paris on Monday.

**Mr. E. Burne-Jones** (who is a native of the town) was on Saturday elected president of the Royal Birmingham Society of Artists for this year. Sir F. Leighton, Mr. Millais, and Mr. Alma-Tadema were elected honorary members.

**The Halifax Art Society's Exhibition** has been closed. Although more visitors were admitted than in former years, only four pictures have been sold. One of the purchasers was a working-man.

**M. Heurtler**, a pupil of M. André, has obtained the Achille Leclère prize of 1,000 frs. at the Académie des Beaux-Arts, Paris, for an architectural design. The subject was "Un Château d'Eau." M. Marcel, who is also a pupil of M. André, has secured the Edmond Labarre prize.

**A Manuscript Book of Hours**, written in bold characters on 183 leaves of vellum, illuminated in gold and colours, with 35 elegantly-designed borders, composed of figures of birds, insects, flowers, &c., and 19 beautiful miniatures, the whole by a Flemish artist, octavo, was sold by auction in Edinburgh on Saturday for thirty guineas.

**The Annual Dinner** of the Artists' Benevolent Fund will be held on Wednesday, April 22, at the Freemasons' Tavern. Viscount Hardinge will preside.

**An Iron Church** is to be erected in Faversham at a cost of 700£. A site has been given by Earl Sondes.

**An Infirmary** is about to be erected at Crumpsall, Manchester, the estimated cost being 2,415£.

**Mr. Gladstone** has presented a bell, weighing 21 cwt., and framing for hanging to the church of St. Seiriol, Penmaen-mawr.

**Mr. D. C. Thomson**, the author of books on Thomas Bewick and H. K. Browne (Phiz), is a candidate for the directorship of the Edinburgh Museum of Science and Art.

**The Bradford Art for Schools Association** has started free drawing-classes for artisans, which are on two evenings in the week. Once a fortnight a concert is given.

**The Campbell Memorial**, in Stoke-on-Trent, is to be a statue in Minton Square, where one of Josiah Wedgwood has been erected.

**A Monograph** on the Temple of Solomon, by the Rev. Père Pailoux, a Jesuit, is about to be published by MM. Roger and Chernoviz, of Paris. It has taken several years to produce.

**A Pastoral Staff** is to be presented to Dr. Temple, by the clergy of the Deaneries of Moreton and Ipplepen, on his translation to the Bishopric of London.

**Mr. J. H. Morton**, of South Shields, has completed the plans of the new Higher Grade School at Jarrow Grange for 576 children, and they have been adopted by the School Board.

**Mr. J. Nodel**, of Manchester, has been successful in the competition for the Great Sankey Board School, Warrington. The other competitors were Messrs. Bleakley & Cubbon, Messrs. Willoughby & Frazer, Messrs. Pierpoint & Adams, and Mr. William Owen.

**Sir E. Beckett** laid the foundation-stone of the church of St. Mary, Doncaster, on the 12th inst. It is to be erected from his own designs. Messrs. Athrom Bros. and Gill are the contractors.

**Mr. John Clark**, of Paisley, has offered to subscribe 2,000£. towards the cost of deepening and improving the River Cart, provided thirty-eight gentlemen can be induced to subscribe a similar amount, so as to raise the 78,000£. which the proposed deepening and improving is estimated to cost.

**Mr. J. T. Brunner** has presented a building for a free library and museum to the town of Northwich.

**Messrs. Jones & Willis**, of Birmingham and London, have just completed, under the superintendence of the architects, the whole of the gasfittings for Holbeck Church, Leeds. The same firm also supplied the gasfittings and choir-standards for St. Anne in the Grove Church, Halifax.

**Mr. Notley** on Tuesday sold the freehold house, No. 159 Fenchurch Street, at the corner of Lime Street, containing a superficial area of 1,400 feet, for 16,700£., being equivalent to 12£. per foot.

**The Artists Corps** will muster opposite the Grosvenor Hotel, Victoria Station, at 8.30 A.M. on Good Friday, and entrain for Forest Row, under the command of Lieut.-Col. Edis. At Brighton the battalion will be quartered, as in former years, in the Corn Exchange. It is expected that the regiment will be nearly 500 strong on the occasion.

**Messrs. Brown and Albury**, of Reading, have dissolved partnership as architects and surveyors.

**The Bradford Town Council** have assigned a part of the Horton Park Cricket Ground as a site for the orphanage to which the late Mr. Joseph Nutter left a legacy of 10,000£., on condition that the site and building should be furnished by extraneous effort.

**The Black and White Exhibition in Paris** has attracted over 1,400 drawings from English, Russian, Belgian, Swedish, as well as French artists.

**The Duke of Devonshire** has had the walls of the north transept, the refectory, chancel, and sacristy of Furness Abbey supported and strengthened by means of strong stays and tie-rods. It was found that the vibration caused by the heavy mineral trains on the adjoining railway was likely to cause much damage to the ruins.

**The Foundation-stone** of the Municipal Buildings at Schaebeck, near Brussels, was laid on Sunday. MM. Snaps and Mège are the contractors, and M. van Ysendyk the architect. The building will cost 200,000 frs.

**The Duke of Hamilton** having offered 4,000£. for the erection of a church at Bo'ness, the Kirk Session have decided to make arrangements at once for the works.

**The Grand Hotel Ritschard** at Berne has been purchased by a company of French capitalists for 600,000 frs.

**The Boring for a Water Supply** of Bewdley is a failure. It was found that, after passing through the coal and iron stone, the water became worse. The alternative scheme of obtaining water from near the Severn is likely to be tried.

**Messrs. Davey, Paxman & Co.** are to supply the steam-power which will be required for the electric lighting of the Inventions Exhibition. In addition to the ten steam boilers and five powerful steam engines in use for the lighting of the Health Exhibition, eight large steel locomotive boilers will be added. It is computed that with the eighteen boilers 110,000 lbs. of water per hour can be made into steam of 100 lbs. pressure per square inch.



# The Architect.

## THE WEEK.

THE engineers of the Manchester Steam Users Association have introduced severe tests for boiler-plates. The pulling, or extension tests, are applied by means of a testing machine, and the strain is increased until the plate is torn asunder. Elongation, as well as the greatest tensile strain, is noted. The bending test is, if possible, more rigorous. Strips are taken of from 6 inches to 9 inches in length, and an inch in width. They are heated to a low cherry red, and then plunged in water of about 80 deg. Fahr. When cold the strips are bent double, the rule being that every one must hinge on a curve, having a radius of not more than one and a half times the thickness of a strip, and it is expected that the bending will be accomplished without any sign of failure being visible. It has been found that steel boiler-plates as now made are, as a rule, much more ductile than iron plates. Strips cut from iron boilers have, on being tested, in some cases behaved most unsatisfactorily. They fractured on bending at the slightest departure from the straight line, and, on being pulled asunder, broke short off without any elongation, showing that they were of a very brittle character, and unfit for use in a boiler. Short brittle plates are apt to give rise to dangerous cracks, which lurk at the rivet holes and lie concealed under the overlap, till in course of time a rip suddenly occurs and gives rise to an explosion. If all boiler-plates were tested on a similar principle, it is considered that many explosions would be prevented.

A STATEMENT has been prepared by the Dean of ELY showing the expenditure on the restoration of his cathedral. Up to 1870 the outlay was about 70,000*l.*, on works directed by Sir GILBERT SCOTT. In the ten years ending 1884 the sum of 4,621*l.* has been expended on the completion of the dome and lantern, which were restored as a memorial of Dean PEACOCK. Several other sums, amounting to over 2,400*l.*, have been paid for repairs of roof, painting, paving, &c. In addition, works have been carried out in the deanery canon's residences, and the schools and Hereward Hall has been erected. The abstract of accounts is by itself evidence that the members of the Chapter of Ely are not indifferent to the buildings which have been entrusted to their care.

THE Cathedral Commissioners suggest that in the diocese of Manchester it would be well to give power to a Board (subject to the sanction of the Bishop and the Ecclesiastical Commissioners) to encourage and assist in the erection of parsonage houses. The money is proposed to be raised on the security of the tithe-rent charge belonging to the Dean and Chapter, and a sum not exceeding one-half of the estimated cost is to be advanced. Both principal and interest are to be repaid by annual instalments in the course of forty years.

It is the general fate of projects for buildings of a public kind to have opponents as well as advocates, and the contest between them sometimes presents strange scenes before a victory is secured for one side or a compromise is arranged. In Dumfries at the present time a contest of the kind is going on, but it has assumed a Homeric character, for the combatants expect that Heaven itself will join one of the parties. The members of the George Street Free Church propose to erect a hall for meetings immediately, and eventually a church. A part of the site of an old prison has been bought. It is the wish of one party in the congregation to proceed with both buildings simultaneously, and, if economy is considered, that would be the better plan. But others are frightened with the boldness of the undertaking, and they desire to rest and be thankful in the existing building. As both parties are resolute, it was resolved to have a prayer contest. It was conducted in the following way:—"Four office-bearers were called upon to pray, two selected from the 'building' section, and two from the opposition,

a member of each party being called upon in turn. The proceedings thus partook somewhat of the character of the ancient 'jousts,' in which single combatants were pitted against each other. Opinions as to the success of the champions seemed to vary with the sympathies of the congregation; but it was felt that the equality of the forces was disturbed when the minister, who is a keen sympathiser with the 'forward' party, took the last word. The proceedings are to be repeated next Sunday, and it is understood that a meeting of the congregation will then be held to deliver, or to hear, the divine judgment." It is not for us to pass an opinion on the faith that is shown in the contest, but it is plain that the combatants had not exhausted human means. Is there no architect in the case whose opinion can be taken as trustworthy?

THE studio of M. DETAILLE contains a collection of blocks in the form of heads of soldiers, on which helmets and other head-coverings, belonging to the French army, are placed. The artist has also a valuable collection of uniforms. M. DETAILLE has, with them and other data, completed a series of water-colour drawings, which show the uniforms of the French army since the First Revolution in 1789. They have been reproduced and will form a delightful work, for, as every one is aware, M. DETAILLE is the first among living painters of military scenes. It is strange that a corresponding work has not been attempted in England, unless on a scale that is almost trivial.

A DECISION which has been given this week in the Glasgow Sheriff Court suggests a difficulty which appears to arise more often since the passing of the Employers' Liability Act. If an accident should arise to a man employed by a sub-contractor, is the general contractor or another sub-contractor, as the case may be, to be made responsible? The workmen answer in the affirmative, for the simple reason that they prefer to have the privilege of suing wherever there is a better chance of obtaining compensation. But the judges are, as a rule, not disposed to take that view. In the Glasgow case a man was employed by a firm who were engaged in laying concrete in a new building, and he was injured through the carelessness of a man belonging to the contractor for plumbing and gas-fitting. He brought an action against the contractor and failed. According to the Sheriff's note, his lordship is of opinion that in cases where the execution of a work had been given to several contractors, it would be unfair if a workman in the employment of one contractor had recourse against another contractor for injuries caused by the fault of the latter's servants. The principle applied to such cases was that where a workman became one of many working in a common organisation towards a common end, he accepted all risks naturally incident thereto, and could not enforce liability for injury except against the person who caused it.

THE voting for the jury in the section of painting for this year's Salon shows that the ten most popular painters in France are the following:—MM. BONNAT, J. LEFEBVRE, J. PAUL LAURENS, HARPIGNIES, T. ROBERT-FLEURY, BOUGUEREAU, HENNER, HUMBERT, FRANÇAIS, and CABANEL.

It is proposed to restore the Cathedral of Berne, and many designs and models have been prepared for the purpose, which are to be seen in the local Fine Arts Museum. People who know the history of the building have, however, misgivings about the success of the work. According to tradition, the unfinished condition of the cathedral was not caused by want of funds, but by unsafe foundations. The architect, it is said, carried on his work until he saw signs of settlements, and then he wisely desisted. If a tower and flèche are added, there will be much additional weight thrown on the walls, which are now no more than safe. The building is interesting, and contains excellent sculpture. Naturally the townsfolk wish to see it perfect, but they are likely in consequence to undervalue the risks attending additions. If the work is to be done, it would be well to have independent opinion upon the strength of the masonry.



## PHœNICIAN ART.\*

THE Phœnicians appear to have held a place in the ancient world that was analogous to our own in modern times. They were a great trading race, and whenever it was found to be more profitable they were ready to produce goods of an artistic class instead of importing them. When commerce becomes a factor it is always difficult to analyse. Designs are sent from London to Japan to be carried out, and cottons are woven in Lancashire which are printed in India. If any of those examples of Western and Eastern co-operation should survive, it will be impossible to apportion the respective merits of the men who produced them. Thus it was in Phœnicia. The merchants were a sort of organising power; results were the chief consideration, and wherever able artists were found they were turned to account. Who can tell how often the ideas were derived from the brown traders, and whether the Greek craftsman simply worked according to order?

It is not surprising that so little is known about the people. They seem to have looked at life from a merchant's stool, and to have judged of things according to their money value. We can imagine them asking, What was the use of keeping beautiful works when it was so easy to put them in a boat and send them westwards, where a high price could be obtained for them? and wondering why so much should be expended in Egypt on temples and pyramids, things which count for so little in the science of exchange. The typical nineteenth-century man of science, according to WORDSWORTH, would not mind botanising on his mother's grave, but Phœnician irreverence was of a lower kind, for the grave was likely to be rifled if it contained any trinkets which might be bartered. The king himself, the mighty ASHMENASAR, could not expect to moulder in peace. His sarcophagus was discovered in 1855, and inscribed on it was an appeal for forbearance that is more pathetic than the one which is seen on the player's monument in Stratford-on-Avon. It was to this effect:—"I myself ordain that the nobles and people shall not open this place of rest, nor seek for treasures in it, nor carry away my tomb, nor otherwise disturb me. Whoever shall do so, may they find no rest nor burial." A few words like these are a revelation, and throw more light on the character of a people than could be derived from a big book. It is plain from them that in Phœnicia everything, including what should be sacred, was supposed to be subservient to gain, and as the foreign markets were, the most profitable, little would be retained that was of value. It is, therefore, vain to expect much from explorations in the country, or to judge of the art of the people from the remains which may be found in Phœnicia.

For many a year the Phœnicians have afforded a safe subject for speculation, and from SANCHUNIATHO to Sir WILLIAM BETHAM it has been utilised without becoming exhausted. History did not pay in old days, and when a scribe was found in any town of Phœnicia the last thing he would be set to work at was the compilation of records. Modern research has not yet been able to pierce the darkness which surrounds the people, and after all his study M. RENAN can only suggest that they were akin to the Hebrews. When they were most powerful the Jews did not attempt to subjugate the Phœnicians; it was with difficulty they were restrained from borrowing gods and rites from their neighbours, and every one knows that when the great temple was to be constructed, the architect as well as the workmen were brought from Tyre. "If you refuse to admit that the Phœnicians were of the same blood as the Jews," M. RENAN asks, "how do you account for their speaking and writing, not one of the idioms which we encounter at their best in Africa, but a language that differs little from pure Hebrew?"

In the "History of Art in Phœnicia," which is the latest part of the Universal History of Art on which MM. PERROT and CHIPIEZ are employed, the discoveries are put in the first place, and the speculations which are inevitable with such a subject do not assume undue importance. After describing the country and the people, the religion of

the Phœnicians is considered. It was not apparently of an exalted kind, and contrasted strangely with what was found in Judea or in Greece. The idols in the Louvre are hideous, and were fit accompaniments of a belief in the utility of human sacrifices. But the explanation is to be found in the character of the people:—

They were, in fact, merchants and sailors. There was no room in their lives either for literary or philosophic culture, or for those æsthetic pleasures which soften the heart and elevate the mind. Torn on the one hand by their sensual desires and on the other by greed of gain, hardened by conflict with the sea and softened by the pleasures that awaited them ashore, the Phœnicians swung from one extreme to another. When their ventures were turning out badly, when their fleets were threatened by storms or their armies pressed by the enemy, they turned in despair to their gods; and made those impious vows which they carried out only too well. A people of traders and harsh to their own debtors, they believed their gods to be as exacting and pitiless as themselves; hence the terrors which led them to sacrifice so many young and innocent lives.

With those notions respecting gods the Phœnicians were not likely to set much value on beautiful temples; and, moreover, there was a liking for monolithic buildings and grottoes, which would make architecture almost an impossibility. The stone along the shore of the Mediterranean was rather friable, and the builders tried to compensate for the defect by using stones of enormous size. The magnitude was heightened by rustication. In Phœnicia brick was apparently never employed, although brick structures are found in Cyprus and other settlements belonging to the people.

Columns were not much valued, and were rarely employed even as accessories. A Phœnician base has not yet been discovered, and it is assumed that "the column was, as a rule, a monolith; and on those few occasions when it was made up of several pieces, as in some of the Cyprian remains in the Louvre, the sections occurred at random, being governed only by the shape and size of the stones, and not by the natural articulation of the support as a whole." The shafts are generally without fluting. In the capitals there is variety. One from Golgos has a rude Doric character, and there is an indication of the Ionic in the Cypriot pilaster caps which are in the Louvre. But apparently something symbolic is suggested by the mixture of triangles, crescents, and concave curves which cover the face, and recall work in the precious metals. We have also a capital that can be called Corinthian, although the calathos is merely ornamented with a few rows of branches, and it suggests to M. CHIPIEZ the employment of metal sheathing:—

It must have been in capitals of this latter form that metal supports, or wooden columns overlaid with metal, terminated. In Phœnicia, as in Egypt and Chaldea, these slender shafts must sometimes have been used, as, for instance, in the support of the salient parts of a building or of porticoes. The penthouse of the Amrit tabernacle seems to have been thus upheld by bronze columns, of which traces have been found on the entablature. Not that the latter requires any supports; but the probability of their having nevertheless existed is rendered very strong by the arrangements of the hypogeum near Cagliari, known as the Serpent Grotto. This monument seems to date from the Roman decadence, but there are peculiarities about it which deserve attention. To the under surface of the architrave the remains of one or two capitals still cling, which, by their size, must have belonged to very slender shafts indeed—so slender that it is in the last degree unlikely that their material was stone. Phœnician was still spoken and written in Sardinia after the Roman conquest, and there is nothing surprising in the fact that architects and ornamentists should also have preserved their taste for arrangements with which they had become familiar during the long Phœnician supremacy.

The influence of Egypt is plainly marked in some of the details, as in a cornice shown by M. RENAN, in which the asp is the *motif*, and an effective one. The winged globe and other symbols are also found; but in the execution there is a combination of Assyrian boldness with the Egyptian ideas. If expensive metals were occasionally used, it is easy to understand the admiration expressed by HERODOTUS on seeing the Tyrian temple.

From the Greek historian's description it is impossible to form a notion of what the Tyrian temple was like. He says simply that it was enriched with magnificent gifts among them being a pillar of gold, and one of a materia

\* *History of Art in Phœnicia and its Dependencies.* From the French of Georges Perrot and Charles Chipiez. Translated and edited by Walter Armstrong, B.A. Chapman & Hall, Limited.



which was resplendent by night. But as with one exception there was apparently nothing in the Phœnician ritual for which the Temple of Immensity might not serve as well as the Parthenon itself, there was little use in a building unless to serve as a storehouse for donations. Yet, from the remains which exist, it is plain that the temples were very remarkable in plan if not in elevation. It is, however, impossible in a newspaper to enter into the exceptional purposes for which the temples were employed. M. CHIEPZ has a hope that if the exploration of Cyprus were conducted exhaustively, much more information would be derived from that island, which was one of the most renowned settlements. The Phœnician type of temple is not, however, without a sort of representative, and a notion of it may be derived from some of the old Cairene mosques, and especially from the great court at Mecca. On this subject the authors write as follows:—

In spite of the scantiness of the data, the individuality of the Phœnician, or rather of the Semitic, temple stands out with sufficient distinctness to allow the historian to grasp its salient features. It is distinguished from the most familiar of our types, that of Greece and Rome, by one capital difference: it attaches much less importance to the *cella*, the chamber in which the image or symbol of the god is placed. It consists of a great court or open-air hall, in the centre of which, at one extremity, rises a tabernacle or pavilion, with the emblem of divine power beneath its shelter. In Greece the attention of the architect was concentrated on the *cella*, the home of the god, the dwelling-place of his often colossal statue. In Phœnicia the symbol was, as a rule, of no great size. The grandiose feature of the Semitic temple was the peribole, the courtyard with its continuous portico, which in some cases included a fine order and a rich scheme of decoration. Even now the Semitic race is not without places of worship in which the general arrangement is much the same as this. In the first place, there are old mosques at Cairo, those of Amron and Tonloun, for instance, where great quadrangles are surrounded by single or double-aisled colonnades, and nothing is wanting but the idol. But if we go to Mecca we shall find the type in all its completeness in the mosque of the Caaba. Even the triumph of the Koran has not abolished the betye, and there, standing in the centre of the wide enclosure, the mystic stone has received for centuries the homage of the Arab tribes.

The masonry has been so worn by time it is difficult to conclude to what extent it was originally dressed. A relic of the early tabernacles, which were cut into the solid rock or wrought from a monolith, is to be seen in the use of colossal stones in their buildings. Many of them seem to have been set up as they left the quarry. There is one example—and only one, we believe—the remains of the Hagiar-kim temple at Malta, where the stones are sparrow-pecked all over, and the work has been interpreted as an imitation of the star-strewn sky. But M. CHIEPZ believes it was “a decoration suggested by the same ideas, and carried out on the same principle, as the carefully-chiselled joints of which other workmen of the same race were so fond.”

In secular works there was a nearer approach to architecture than in the temples. The fortifications were massive examples of construction, the hydraulic works might be compared with those of the Romans, and the harbours were surprisingly well arranged. There are a few fragments of masonry belonging to dwelling-houses, and it is supposed that the villas at least of the Phœnicians showed signs of taste as well as of luxury. The prophet, in addressing Tyre, suggests that the merchants were surrounded with precious things—“Thy builders have perfected thy beauty; the company of the Ashurites have made thy benches of ivory, brought out of the isles of Chittim”; and, from what we know of the people, it is not unlikely that their dwellings were the best examples of Phœnician building.

Works of sculpture, painting, pottery, metallurgy, textiles, which are ascribed to the Phœnicians, still survive. The examples which were found in Cyprus by CESNOLA, and are now in New York, are by themselves almost sufficient to suggest how much art work was produced in Sidon. But it would be difficult to define the characteristics by which the work is recognisable. There are over six hundred illustrations in the volumes of MM. PERROT and CHIEPZ, but from the variety that is among them they could be divided into groups as representing the work of other races. Some things are markedly Assyrian, others are as distinctly Egyptian: we see even signs of the Greeks. A coin of Carthage is late Greek. The objects found by Dr.

SCHLIEMANN, which are supposed to be prehistoric, have corresponding types in Phœnicia. The traders travelled so far and mixed with so many races as to become cosmopolitan, and slaves from all lands then known may have worked in their factories. The native style of Phœnicia, if there was one, was not fostered, or it was lost in the eclecticism which was a consequence of extensive commerce.

The remarkable variety imparts interest to Phœnician work. In studying the examples we seem as if we were reading a volume which is mainly made up of quotations from unknown authors. There are figures which appear to be bad copies of something better, while others look as if they had been produced to suit particular markets. Indeed we can say that no art is so widely related as the Phœnician. The old race of writers paid little attention to figures in stone and terra-cotta, and to them Phœnicia was a mysterious land, which had given rise to a vast number of fabulous stories. MM. PERROT and CHIEPZ, on the other hand, endeavour to base their conclusions on things which have been discovered; they are wedded to no pet theory, and consequently there is no straining after conclusions in their book. In their pages we can see what modern research has done towards dispelling the gloom which has fallen on the life of one of the greatest peoples of antiquity.

### VICTOR HUGO ON EUGÈNE DELACROIX.

THE exhibition of the works of Delacroix in Paris has recalled many references to the painter which are found in the books of modern writers. Among others is a record of a conversation between Victor Hugo and Arthur Stevens, the painter, who was an enthusiastic admirer of the great artist. The subject of the after-dinner talk on the occasion was painting, and when Delacroix' name arose M. Stevens expatiated on the qualities of his works.

Delacroix has every quality save one, said Victor Hugo, but it is one that is most essential, and is always to be found in the works of supreme artists, whether painters or poets—it is beauty. With the exception of those in the *Apparition of the Angels*, in the church of St. Paul in Paris, and a figure in the *Massacre of Scio*, in the Luxembourg, there is not one beautiful woman in all his pictures. There is expression, but it is not the ideal. The *Algerian Women*, which sparkles with light and colour, presents the exquisite ugliness that is to be found in his works.

But, said M. Stevens, is not expression by itself beauty? Have we not there a type of beauty that is definite and apparent? We can see the constituents of ideal beauty—large eyes, a straight nose, a small mouth, a round chin, a high forehead, an oval visage—in the blocks in a hairdresser's window, and the result is a monster. Out of a low forehead, a large mouth, a short nose, and small eyes, Delacroix is able to create beauty that fascinates.

It is brilliancy, said Victor Hugo, but not beauty. In speaking to Madame Dorval I once ventured to tell her that she was not pretty, but worse. We might apply the same phrase to all the women of Delacroix, and addressing his Odalesques, his Ophelia, his Marguerite, his Medea, his Magdalen, say to them, “You are not beautiful, but dangerous. The line of beauty in your faces, if luminous, is broken; but you dazzle and overcome like a flash of lightning. You are irresistible as Fate, and those who admire you do so in spite of you and of themselves. You may well be proud, for you are irresistible. The *Night* of Michael Angelo, the prodigious seraphim in *The Last Judgment*, the superb angel in the *Tobias* of Rembrandt, and the exquisite little girl in his *Night Watch*; then below those two inapproachable masters, the *Jocunde* of Leonardo da Vinci, the *Antiope* of Correggio, Titian's *Mistress*, the *Virgins* of Murillo; then, lower still, the *Magdalen* in Rubens' *Descent from the Cross*, the splendid nudités in the *Fécondité* of Jordaens, the *Exterminating Angels* of Frank Floris, the *Herodiade* of Quintin Matsys, the *Virgins* of Van-dyke; then, in another sphere of art, the women of Watteau and the patrician dames of Paul Veronese, all realise the eternal type of beauty, and by the unanimous consent of all eyes are tranquilly sublime. But you, creations of some unknown sorcery of art, bewitch us into admiration.”

Surely, said Stevens, that is enough for a painter.



Granted, replied Victor Hugo, but we must then take another point of view. The question we are dealing with is beauty that is eternal, however much it may be multiplied and varied, and is always recognisable by the only definite judge of art, the public. Observe, I have not mentioned Raphael in my list. Raphael's beauty is cold. He was deficient in expression, as we may judge from the monotony of the faces of his Virgins. I don't care for beauty without expression, or expression without beauty. Now we can say of the women painted by Delacroix that they have expression—but are without beauty. They are all, probably, in accordance with the ideal of Eugène Delacroix; but it is not the ideal of the human mind. Passion is there, but where is the face? Would the look be less intense if the eyes were beautiful? would the cry be unheard if the mouth were fine? would there be less thought with a high forehead? The painter, even more than the poet, is bound to render above all things the material form. We writers can, if we think it better, paint the gesture rather than the arm, the looks rather than the eyes, the attitude rather than the body, and life and passion rather than the form. We give expression in the first place, then we draw, and we may not even draw what is expressed. But what is the writer's privilege is far from being the painter's also. I defy any painter to express as we can a blow of a fist that has not five fingers; a look of love without the aid of an eyeball; a reverie without a forehead; or to suggest a great heart unless there is a breast-bone.

One day Eugène Delacroix made me look at one of his finest pictures—*The Assassination of the Bishop of Liège*. Of course I admired it, but I put a question to him. Pointing to a figure, I asked what the man held in his hand. Delacroix, in reply, told me that he wished to paint the flash of a sword blade! Now to paint the flash of a sword without the sword itself is not a possibility with the painter's art, but with ours. There is in one of the Paris churches—I think it is St. Etienne-du-Mont—a picture, by Albert Dürer, which represents the beheading of St. John the Baptist. It shows the very thing that was sought by Delacroix. You get an impression of a stroke that flames as it falls, of a thunderbolt that nothing can resist, much less a head. The effect is formidable. But when we examine the picture we find that the sword is represented in the most painstaking way. It is a large and strong blade, square at the end, with a sixteenth-century hilt, which is as finely wrought as it is adapted to the hand. The flash satisfies a poet, and the sword would please an armourer. The picture is complete. Colour and drawing, spirit and form, life and style, expression and beauty, are so well combined that they cannot be separated. The painter's aim has been attained. If to the perfection of expression and of beauty in his work the painter, sculptor, or writer will add an idea of progress, if the *chef-d'œuvre* be also useful, if it be intended to enlighten rather than to dazzle, if it be not only the beautiful but the true which is sought after, then we have the ideal of art. I have said all this before in a book entitled "William Shakespeare." There also will be found this expression, "It is not against the lions that the prophet roars, it is against the tyrants."

## WESTMINSTER HALL AND ITS ADJUNCTS.

[BY A CORRESPONDENT.]

AS Mr. Shaw-Lefevre informed the Select Committee that "it might be understood that the idea of completing Sir Charles Barry's scheme had been given up," some more modest plan will, I presume, have to be adopted. The present manifestly incomplete arrangements are an eyesore, and it is not quite to our credit that they should have been suffered to exist so long. Let us hope that Lord Rosebery will be not less vigorous at the Office of Works than the late First Commissioner, and that in architectural matters he may be even more successful.

I have been considering this question as a whole, the only method, I think, of arriving at a satisfactory result. At all events, if any one will consider my idea it may aid in the determination of three questions, more or less intimately connected—viz., the treatment of the Hall, the providing of a moderate addition to parliamentary accommodation, thought by

some members of Parliament to be urgently required, and, the Abbey being full, the erection of a monumental chapel for future memorials.

Considering that the present open character of the neighbourhood is very agreeable, and that lofty and continuous buildings would both swamp the Hall and shut out from view the present beautiful *ensemble* of Sir Charles's towers and spires—which time has almost sanctified—I would suggest that any future buildings should be not more than two storeys above ground—one tower, perhaps, being sufficient to maintain architectural character and harmony with the existing structure—and that they should be disconnected except on the ground-floor. The great gateway should be the noblest Gothic gateway ever built, having numerous arches surmounted by the beautiful fan groining characteristic of the style. As the west face of the Hall originally formed part of an internal court of poor architectural detail, but is now destined to fulfil a more important external office, common sense seems to demand that it should be liberally restored with at least a new battlemented parapet. For my own part, I agree with Mr. Seddon that stone dormers similar to, but plainer than those of the Hall at Rouen, would be the best means of getting rid of the unfortunate lowness of proportion.

By diverting St. Margaret Street, which could be easily done, a site for a campo-santo, or monumental chapel, might be secured at the cost only of the diversion. No purchase-money would be required. The cost of the land alone for the proposals to the south of the Abbey—of Dean Stanley and Sir Gilbert Scott, Mr. Shaw-Lefevre and Mr. James Fergusson—varied from 200,000*l.* to 80,000*l.* Nearly the whole of this would, therefore, be saved. Now, if the continuity in the unrivalled series of our national memorials is not to be broken, this is a most urgent question. The diversion of the street would provide an admirable site. The building could be connected with the Abbey by a crypt which, as connected with the commemoration of the dead, would be of appropriate character. Crypts are important features in Continental churches. In some cases they are more beautiful than the churches above them. A few steps in the Abbey would lead to the one now proposed, which might be arcaded to receive future monuments, and be lighted by a lantern, forming an ornamental feature above ground. Doubtless, the Dean and Chapter of Westminster, as patrons, would not very seriously object to a new east end—for such it would appear to be—being added, without cost to themselves, to St. Margaret's Church. The monumental chapel, as a national work, would properly be paid for out of national funds, and, like the present restoration of the Abbey, would be undertaken by the Government and the Ecclesiastical Commissioners. The proposed diversion of St. Margaret Street would also secure a direct approach to the Queen's entrance to the House of Lords under the Victoria Tower, as well as to the Lords' entrance at St. Stephen's Porch, instead of the present tortuous and contracted road, while the Abbey, the Monumental Chapel, the Hall, and the proposed new buildings might be kept as separate as possible. There would result a very striking, if not unequalled, architectural *coup d'œil*.

## DESIGNS FOR CAST-IRON WORK.\*

SO many disturbing elements intervene between the conception of a design in cast-iron, and the completion of the work in the building, that we all have to allow what we call a factor of safety (aptly characterised by the late Alexander L. Holly, C.E., as a factor of ignorance) to cover these contingencies, varying from three, or one-third the breaking strain in very simple cases, where the quality of the castings can be depended upon, to five or even ten where the design is more intricate, or the liability to shrinkage strains, hidden defects in the castings, rough bearing surfaces, or uncertain variations of the load are possible. Much can be done by designers of cast-iron work to reduce this factor of safety, and consequently the weight and cost of castings, by giving serious consideration to the many processes and changes of condition through which their designs pass on the road to the building. Foundrymen exercise great ingenuity in producing any design in iron that

\* From instructions by Mr. C. W. Trowbridge in the Hand-book of the Union Foundry and Pullman Car Works of Chicago.



may be presented to them; still it is possible to design things that are totally impracticable in cast-iron, in which case the designer would probably be asked to modify his drawing, but when it is possible to carry out a design without change it is the almost universal practice to do so without comment and without recollection of the fact that the resulting castings may have very serious shrinkage strains or other defects, which would reduce the strength far below what the designer expected.

For instance, a column, say 16 feet long, 8 inches in diameter,  $\frac{3}{4}$ -inch metal, is sometimes designed with a heavy projecting base moulding near the bottom, say 12 or 14 inches in diameter, giving 3 inches or more thickness to the metal at that point, also having an extension of the shaft to pass down through a shell plinth or pedestal, while at the top there is a shell cap and then a shelf, say 12 by 24 inches for girders, made, possibly,  $2\frac{1}{2}$  or 3 inches thick, to insure strength without the use of brackets or ribs. This, like all other architectural work, will be moulded in "green sand," which is moulding sand slightly dampened with water, and rammed solidly around the wood pattern, forming a mould strong enough to withstand the wash and pressure of molten iron running into the mould. When we consider that iron weighs four hundred and fifty pounds per cubic foot, while water only weighs sixty-two and one-half, an idea may be formed of the strength of mould necessary to stand the wash and pressure, which, in a mould 3 feet high from the bottom of the casting to the top of the gate, where the iron is poured in, is fourteen hundred and forty pounds per square foot, nearly three-quarters of a ton on each square foot of surface: consequently the sand must be firm.

Now, realise that the pattern for this 16-foot column is made 16 feet 2 inches long, to allow for shrinkage; also remember that when this shrinkage occurs something has got to give. The shaft of your column being only  $\frac{3}{4}$  of an inch thick, will solidify and commence to shrink, while the metal in your heavy base moulding and the shelf at the top is still fluid, and a little metal will run out into the body of the column as it draws away in cooling, leaving a little vacancy or depression in the upper part of the shelf or base. Presently these heavy parts will become about the consistency of cheese, but the shaft of the column keeps on cooling and getting shorter. Now the situation becomes serious. The soft metal in the base and shaft is not solid enough to allow the column to draw them bodily through the sand mould, so they stay where they are and the column shrinks away, stretching out more of the soft metal after it, making a weak place or leaving a nice little crack to be filled up with putty before the column is painted, and in an extreme case pulling away so much that the head will drop off when the column is hoisted out of the mould. Then the foundryman looks wisely at the column and says, "Now I will fix you," and puts a fillet around below the shelf, or a bracket, which will cool quickly and help pull, chipping out the bracket when the column is cold. In case all these fail, he just lays in some cold pieces of pig-iron before closing the mould, and they cool the heavy places off rapidly and everything is lovely. This last makes the soundest job in the lot, as they all melt down together; still there is liable to be dirt on the surface, and shrinkage strains that would not be there if the designer had made his metal in the shelf only one and one-quarter or one and one-half times as thick as the shaft, put in some strengthening ribs or brackets, and had also made his whole base shell, except a small bead or fillet, thereby justifying a smaller factor of safety, and allowing all parts to cool at the same time. Mullion columns are often designed with a heavy square face cored out, which stands in front of the wood frames, while a thin web runs back between the sash-weight boxes. This is an exceedingly hard shape to cast without shrinkage strains. The cored part in front only radiates heat from one side (the core being quickly heated through), while the webbed back runs away off towards the remote parts of the mould, giving off heat on both sides, and the extreme back edge radiates in all directions but one, thereby cooling much faster than the front part, so that when the back has attained its length for normal temperature the front is still red-hot, and much longer. When the front cools there results a strain, which gives this column all it can do to hang together until it gets into the building, without doing its full share of work after getting there. Moral: A good, liberal factor of safety, or a nice large rib of metal, round or square, on the back of the web to keep it from cooling too fast.

The privilege of modifying the thickness of parts of castings to avoid shrinkage strains is one that a designer can safely give a foundryman, for it is always cheaper to make castings right than wrong, to commence with. Still, any foundryman can call to mind numerous instances in which he has received serious rebuffs when he has volunteered advice which he considered good to designers who did not care to hear it, consequently they are often backward about volunteering their opinions. Unequal cooling and consequent crookedness of shell pilaster faces, frieze plates, and light ornamental work is usually corrected by the foundryman without asking the designer's permission, as it is utterly impossible to get light work straight

without providing for equal and uniform cooling. But in the manufacture of thicker pieces and parts intended to sustain loads of any kind, the foundryman never makes changes or asks permission to change, if he can possibly execute the work as per drawings received. Generally speaking, a more intimate association between designers and executors of cast iron would result in a great saving of metal and a reproduction of the factors of safety. Imperfect and unsound castings, owing to carelessness in the manufacturing, are much more rare than is generally supposed. Cold shuts from pouring the metal too cold, honeycombs, dirt, and scabs from soft or unclean moulds are quite rare, and never dangerous in the work of reputable foundries. Many more bad castings are made through an honest endeavour to carry out a design which is not positively the best thing possible for the place, than from carelessness in the execution of the work.

Among the most noticeable indications of shrinkage strains in finished castings is crookedness. One side will be shorter, thereby giving the whole piece a crook, or in the case of wide plates they sometimes appear with the centre perfectly straight and both edges "loose," or apparently too long for the centre. The same may be said of the thin back ribs sometimes put on mullion columns. This comes from the apparently long parts cooling first, so that when the heavier parts cool afterwards the light parts are left too long for their places, while the loss of strength incident to these causes is usually provided for by the enormous factors of safety used. Still, if designers would examine their castings carefully they would soon be able to design forms not liable to these defects, and reduce their factors of safety accordingly.

### MR. P. MORRIS, A.R.A., ON ART STUDY.

THE prizes in the St. Martin's School of Art were distributed last week by Mr. Phil. Morris, A.R.A. He said he had yielded to the flattering solicitation of his friend, Mr. John Parker, the master of the school, which has turned out so many competent, and not a few famous, painters.

In studying art it was indispensable that the student should begin at the foot of the ladder—with drawing in outline. At first sight it might not appear an inviting task to have to copy apparently tedious outlines, suggestive of so many worms trying to wriggle themselves straight. But those well-known curves, which were really the outcome of the great knowledge of Mr. Dyce, contained every beautiful outline, and if the student would only work at them and take heart, he would find that they would powerfully contribute to the development of his powers of perception. The tradition of the "O" of Giotto was perhaps no mere fable, but the faculty attributed to that artist was possessed by few. Daniel Maclise had it, and it was said that he could trace a circle so perfect that compasses were necessary to prove its inaccuracy. How many men had started on a wrong road, and with pain and difficulty had had to retrace their steps before they found the right road. It was in schools such as the St. Martin's that they were educated in the first principles of real art. Looking around at the works exhibited in a room above them, he had been very much struck with the ability with which the students had grasped the most difficult branch of all, and that was, painting from the life. While they were drawing from copies they were only in the preface, but as soon as they drew from life they opened the first page of the book which it would take them their whole lifetime to read. He remarked that they had some faculty of sketching, but none of imagination. It was a very good thing to exploit the faculty of throwing off from the mind designs in light and shade, in outline or colour, but the great glory of art was the imaginative faculty, and this was the last faculty developed in humanity. At the present time realistic painting was dominant, and certainly that should be so, for it was upon this that all imaginative painting was built. But he maintained that this was only the bricks and mortar of the edifice; the imaginative faculty took the place of the architect, who gave the beauty of design to a building. Never let them therefore for a moment begin to sketch before they had well conceived their subject. If they had only to depict a couple of horses, or even a couple of tubs, it was possible to give an air of style to them, although the sketch might be a comic one, for there was such a thing as style even in comic art. The study of art was still behindhand in this country, and the only hope for it was in such schools as the St. Martin's, where there were earnest students who formed each of them a centre from which they disseminated well-digested principles of art. It might be hoped, therefore, that in the future generations this country might be a centre of art in Europe, for he was quite certain that in no country had the subject of art been ever taken up more earnestly than in this country at the present time. The beauty of the painter's art was the delight which it gave to the possessor in the opening of the book of nature. The charm of colour in common objects which before had



never been observed, the exquisite grace of curves of line, the form of face, everything in nature had power to speak to the artist. It was like an added sense, and he regretted that those gentlemen who rode behind the art coach, the writers upon art, had not sufficiently shown the beauty of this development, and urged people to see nature as it could only be seen by an artist. To the ordinary man a fine day was merely a fine day; but to the artist the beautiful analogies, the harmonies in sky, distance, and foreground, the effect upon faces and figure, the light and shade, all of which it presented, were a marvellous source of delight, and it was the artist alone who could see and appreciate them. He rejoiced, therefore, to consider the progress which had been made in recent times in the study of art in this country. To be able to sketch is no longer in the professions, and especially in the army, so great a distinction as formerly, owing to the spread of knowledge. In fact, it could no longer be said, as was once said with some truth by Mr. Ruskin, that no one looked at art, no one cared for nature, except when the sun looked like a frying-pan or the moon like a fool.

## YORK ARCHITECTURAL ASSOCIATION.

A LECTURE on "Building Construction" was delivered by Mr. R. A. Parkin, architect, at the last meeting of the Association. In commencing, it was regretted that there was at present no systematic training for architecture. If a youth entered an office he proceeded upon no fixed plan to learn his business, and it would be a great advantage if there could be schools established to teach youths the rudimentary principles of the profession they were about to adopt. Another thing which prevented many from following the constructional part of the profession was the fact that architects who desired to become architectural artists were afraid of becoming utilitarians. An architect to be perfect in his profession should be an universal genius; and surmount any difficulty in construction; and more than that, he should have a knowledge of science, so as to enable him to perform his work in a true manner—true in an artistic sense. Mr. Parkin referred to the varying solidity of the earth which formed the foundation for the building. Uniform resistance should be carried out, and they should avoid underpinning wherever possible. Referring to the construction of walls, he remarked that brickwork could never be crushed by fair means. If the foundation was good, it was almost impossible to build a building high enough to crush brickwork. The scientific construction of the walls was never considered at all by some people building them; they generally built them thick enough to stand, and of course the builder had to pay the cost. He spoke of the formation of arches and the pressure upon the various portions of them, after which he referred to lime, sand, and concretes. Mr. Parkin also referred at length to the construction of wooden roofs, and remarked that in future ironwork would without doubt be one of the architect's greatest features.

## TESSERÆ.

### Pompeian Decoration.

SIR M. D. WYATT.

WITH regard to the position which Pompeii and its decorations should occupy in the history of art, I may observe that we are too much inclined to speak of "the Pompeian style" as though the remains of Pompeii presented one style only; whereas it is difficult to imagine any more concrete phase of style than that of Pompeii. Originally a Greek colony, the town afterwards became amalgamated with its Samnite and Etruscan conquerors. It ultimately degenerated into a mixed race known as Campanian, and became subject to Rome; thus, in its various vicissitudes, obtaining some modification from each existing school of art. Altogether we have a most charming mixture of styles, and any person going carefully through the existing remains cannot but trace many forms which cannot be accounted for, unless they may have been derived from these mixed sources. In some paintings we find green and purple used with curious white lines, more Etruscan in its character than anything else; there is a good deal of Greek work about the tombs, and in the earlier portion of the buildings the Greek style of decoration was most prevalent, according with the monuments which M. Hittorff has illustrated in Sicily. The decorations in such cases are divided into compartments of flat tints, with central pictures, frequently surrounded by frets and ornaments of the kind, apparently derived from mosaic work. Subsequently the fashion changed with what was going on in Rome. In the time of Augustus Pliny relates that Ludius, a celebrated painter, introduced a system of arabesque decoration; and in the most fashionable houses of Pompeii that style appears to have been

carried to very great perfection. Upon this there supervened a more fantastic style, in which there is a quantity of architectural work indicated in thin lines in a most peculiar manner. The Cavalier Canina has attempted to demonstrate, from this style of decoration, that these lines were derived actually from existing models, and that the upper apartments and terraces of Pompeii, some of which were doubtless constructed of wood and gaudily painted, were the models upon which the style was founded. Hence he has endeavoured to demonstrate that every nation possessed, in addition to its severer style, an "architetina svelta," a thin style. This position is one which I think scarcely tenable, because these designs appear to be rather the fantastical conjectures of a person whose mind was filled with *concetti* than serious productions of any kind. Generally the colours at Pompeii are arranged in horizontal zones, the lowest being the darkest, the second intermediate in depth, and the uppermost the lightest of all. Perhaps the most striking characteristic of these works is the extraordinary exuberance of invention which they display. Hardly one moulding or ornament is like another, and even the two sides of the same ornament are seldom alike. This is an interesting circumstance, as proving that their artists did not trace their drawings on the wall, but drew them freely as their fancy dictated. This is further illustrated by one painting, engraved by Mazois, which represents an artist taking the portrait of a gentleman, which he is doing with outstretched arm and a free hand, and seated at a distance from the picture; whereas one of our own portrait-painters would be using the maulstick and resting his hand almost close to his canvas.

### Origin of Flints.

WILLIAM WHITAKER, F.G.S.

The flints of the upper chalk have ever formed a subject of speculation to geological inquirers. At one time thought to be of purely mineral origin, at another to have been deposited solely around organic matter, they are now generally accounted for by a mean between those two opinions; for whereas there is no doubt that the silica of which the flint is formed has very commonly been deposited around the remains of animal or vegetable organisms, whose substance, moreover, has often been replaced by flint, yet there are other cases, notably the more or less vertical or highly-inclined layers that run along joints in the chalk, in which a purely mineral origin is clear, the flint being simply deposited from solution along those lines. The flint in the chalk occurs in two forms: either as irregular-shaped isolated nodules, mostly in definite lines, but sometimes sparsely scattered, and often with an organic centre; or as continuous layers, mostly thin, but sometimes half a foot thick. As a rule the outer coat of flint is white and the inside of a dark colour; the white coating, though differing so much in look from the rest, is really of the same composition, the difference being simply caused by a molecular change in the condition of the silica, the particles of which would seem to have been rearranged through long continued, though partial, exposure to some external agencies. In the tabular layers of flints, however, there are sometimes alternations of black and white layers with some of the latter internal, in which case exposure would not account for the difference.

### Costume in Sculpture.

HENRY WEEKES, R.A.

A statue is not erected to commemorate the dress, but the man; it is sufficient, therefore, if the former be so indicated as to give the general impression of belonging to its wearer and his times. Such peculiarities in it as are unimportant, or offensive to good taste, or that detract from the broad treatment of the work, should be omitted or judiciously concealed. An artist of right feeling finds no great difficulty in this; though, perhaps, nothing serves so much to distinguish his work from that of inferior men as due attention in this particular. There are many kinds of modern dresses as well suited to sculpture as the most simple drapery, such as the robes of our princes and peers, our judges and clergy; and it is rarely that an opportunity is wanting in a statue of selecting one or other of these. Even the ordinary modern dress worn in our streets may, by a little modification and treatment, be so approached in marble as to give a general impression of identity, and yet not be ludicrous or offensive to those who may hereafter have to look at the work when the fashion shall have changed or entirely departed. Were a proof wanting that this is the correct method of solving the question, we might quote the opinion of Flaxman, as shown in his works. Though the most imaginative sculptor England, or perhaps the world, ever produced, his portrait statues are singularly literal; in fact, if they have a fault it is the too close adhesion to the detail of modern dress, evidently showing that he felt the sound judgment of not departing from those things that mark identity of person and period. His figure of Sir Joshua Reynolds in St. Paul's Cathedral is an instance of judicious choice of costume, and will bear comparison with most works of the English school; and his statue of Pitt is another instance of close



attention to this point, notwithstanding which it is a thoroughly characteristic work—simple and elegant, dignified and statesmanlike.

#### **Influence of Materials on the Architecture of London.**

SIR A. ALISON.

The unfortunate circumstance of stone or marble not being found in the neighbourhood of London has undoubtedly had a most prejudicial effect, not only on the durability but the character of its architectural edifices. If the freestone quarries of Craigleith, near Edinburgh, had existed at Highgate or Hampstead, not only would the metropolis have been constructed of lasting materials, but their solidity and cost would have stamped a character of simplicity and grandeur upon its architecture which constitute the only foundations of real excellence. It is impossible to construct long rows of whited sepulchres with stone. The meretricious and overloaded ornament of modern London would have been effectually banished by the mere use of a hard material for building. There is no end to stucco friezes or statues. It is easy to cast capitals, according to "Mr. Nash's positive order," in a mould, and whitewash them to resemble freestone; but it is not so easy a matter to play these antic tricks with solid masonry, or run the risk of destroying a sumptuous edifice by the ridiculous attempt to effect innovations in the Grecian orders. If the National Gallery in Trafalgar Square had been constructed of stone, it would never have exhibited the pepper-boxes and vitiated taste which make all Englishmen blush who recollect the Louvre or the Vatican. Had Buckingham Palace been built, as it should have been, of freestone or marble, it would never have exhibited that overloaded ornament and unbecoming proportion which, notwithstanding much beauty of detail, renders it no fit palace for the kings of England.

#### **Concrete Construction.**

ROBERT ABRAHAM.

The result of the experiments made during the progress of the works (at the Westminster Bridewell) was fully confirmatory of the views originally detailed in contract, which required an admixture of 1 part lime to  $\frac{3}{4}$  gravel, containing sand in the proportion of  $\frac{2}{3}$  of the aggregate, or, in other words,  $\frac{1}{3}$  lime,  $\frac{2}{3}$  sand,  $\frac{3}{4}$  gravel. Care and regularity in the execution of the work are of great importance, success very much depending upon the degree of precision and uniformity preserved in proportioning the components. It is, therefore, necessary that such a system be adopted of depositing the material on delivery, either in rectangular or other shaped heaps of uniform size, as will render obvious any deficiency of lime or sand, and be an invariable measure for the requisite quantity of water. The mode of throwing in the concrete is also important, very great advantage being obtained from the rapid consolidation arising from pressure when cast from a height, instead of being laid in steps or layers. The degree of expansion peculiar to concrete when thus executed may be noticed; this takes place immediately the operation of slacking has occurred, giving an urgent reason for the prompt use of the material after mixing, and showing the necessity of using the lime in a perfectly fresh and pure state; large landings are raised very perceptibly by this peculiarity, and the crown of a brick arch has been known to fracture from its effect. It must, however, be stated that this expansion occurs subsequently to an original loss of some magnitude upon the measure of unmixed material, 27 cubic feet of gravel (with its due proportion of sand included), together with 3 feet of ground lime and a little more than 4 cubic feet of water, yielding only 24 feet of concrete.

#### **Efflorescence on Walls.**

C. H. SMITH.

Under ordinary circumstances, it is scarcely possible to get rid of the various saline or deliquescent substances that have once been admitted into the walls of a building. The fixed alkalies (potash and soda) may probably be considered imperishable, no length of time can injure them; they may effloresce, or rather they may crystallise on the surface of a wall and totally or partially disappear again and again, as often as a change in temperature or of dryness or humidity takes place. These changes may be daily, or the salts may remain inactive during ages, and from some favourable cause a crop of crystals may be produced as vigorously as if the wall had recently been finished. The only way to abate the evil is to brush off the crystals whenever they appear to be in the most flourishing condition. If potash has been introduced into the walls either from the putrefaction of animal or vegetable substances, or from other sources, however thick the wall may be it will make its way to the surface, and then absorbing nitrogen from the atmosphere, which contains seventy or eighty per cent. of that substance, "nitrate of potash" or saltpetre is produced. Salts are generally communicated to a building in weak solutions. The water very gradually evaporates, carrying

with it from the interior of the wall the molecules that compose salt. The solution having arrived at the surface so as to be freely in contact with the atmosphere (always so essential to crystallisation), evaporation continues until the solution is sufficiently strong to crystallise, still leaving the mother water in the wall, which is indicated by a certain dampness.

#### **Treatment of the Upper Parts of Buildings.**

SIR C. WREN.

There are different reasons for objects whose chief view is in front, and for those whose chief view is sideways. Fronts ought to be elevated in the middle not the corners, because the middle is the place of greatest dignity and first arrests the eye, and rather projecting forward in the middle than hollow. For these reasons pavilions at the corners are naught, because they make both faults, a hollow and depressed front. Where hollows and solids are mixed, the hollow is to be in the middle, for hollows are either niches, windows, or doors. The first require the middle to give the statue dignity; the second, that the view from within may be direct; the third, that the vista may be straight. The ancients elevated the middle with a tympan and statue, or a dome. The triumphant arches, which now seem flat, were elevated by the magnificent figure of the victor in his chariot with four horses abreast, and other statues accompanying it. No sort of pinnacle is worthy enough to appear in the air but statue. Pyramids are Gothic, pots are modern French. Chimneys ought to be hid if not well adorned. No roof can have dignity enough to appear above a cornice but the circular: in private buildings it is excusable. The ancients affected flatness. In buildings where the view is sideways, as in streets, it is absolutely required that the composition should be square, intercolumniations equal, projections not great, the cornices unbroken, and everything straight, equal and uniform. Breaks in the cornice, projectures of the upright members, variety, inequality in the parts, various heights of the roof, serve only to confound the perspective and make it deformed, while the breaches and projections are cast upon one another and obscure all symmetry.

#### **Egyptian Art.**

W. A. BROMFIELD, F.L.S.

An extraordinary inequality of design and execution seems the prevailing characteristic of Egyptian sculpture and architecture. As for the paintings on the tombs and on the roofs and ceilings of the temples, I must confess that, with very few exceptions indeed, I never saw any that, to my eye, looked superior to vile daubs such as a country sign-painter might feel ashamed to have executed. Some of the figures of men and animals in processions, &c., are tolerably portrayed, chiefly in their peculiar subdued red or Etruscan vase colour; but whenever they attempt flowers, fruit, foliage, a scroll, or any complicated object requiring strong shading or relief, I have seen nothing but utter failure—flat, sandy, ungraceful designs. I know it is the fashion in England to talk of the extraordinary brilliancy and durability of these colours as being inimitable in these degenerate days, by the loss of the mode of their preparation, one of the pretended secrets of ancient art; but this assertion I have learnt to class with the customary ravings about Eastern skill, sunlights, shadows, moons, flowers, and fruits. The Egyptians knew nothing of oil paints, and all their water-colours that I have seen on the stucco or stone of their walls, whether in tombs or temples, have an opaque, earthy, or (what I believe artists call) muddy appearance, which argues no great skill or knowledge of the materials best adapted for yielding bright clear colours.

#### **The Windows in King's College Chapel, Cambridge.**

J. DALLAWAY.

The most magnificent series of windows in England, now existing in such a state of perfection, is that in King's College Chapel at Cambridge. There are twenty-three windows. Each window has six subjects taken from the Old and New Testaments, exhibiting analogous stories in the richest colours. The drawing is correct, and it is probable that they were finished by English artists from Flemish cartoons. These artists, at that time claiming only the humble appellation of glaziers, were furnished with excellent designs, which they procured from the Continent. Bernard Flower was the original undertaker of King's College windows, but died before their completion. Francis Williamson and Simon Symondes finished four of them at sixteenpence the square superficial foot. Galyon Hoone, Richard Bound, T. Reve, and James Nicholson undertook eighteen others, on the east and west sides, at eightpence the square superficial foot, as agreed by indenture, dated 1527. They are there bound to set these windows up "with good, clene, sure and perfyte glasse, and oryent coullours and imagery of the story of the old and new lawe, after the forme, maner, goodenes, curiosyte and clenelynes of the glasse windowes of the kinge's new chapel at Westminster."



## NOTES AND COMMENTS.

THE Glasgow District Board of Lunacy have decided that a limited competition among local architects is likely to be the surest way to obtain a good design for the new Hartwood Asylum. In response to the advertisement eighty-three architects sent their names, and the following gentlemen have been selected:—Mr. JOHN BAIRD, Messrs. BALDIE & TENNANT, Messrs. H. & D. BARCLAY, Messrs. JOHN BURNET & SON, Messrs. CAMPBELL DOUGLAS & SELLARS, Mr. BRUCE J. HAY, Mr. HENRY HIGGINS, jun., Messrs. LANDLESS & CLIFFORD, Mr. FRANCIS STIRRAT, and Mr. JAMES THOMSON. The conditions are that a premium of 50*l.* is to be paid to each competitor; that on payment of the premiums the respective designs shall become the absolute property of the District Board; that the District Board shall not be held as bound to execute the work according to any of the plans to be obtained; and that the District Board shall be at liberty to employ as architects for the buildings either any one of the architects competing or any other party. The conditions are extremely rigid, for they mean that by an expenditure of 500*l.* an enormous amount of labour will be undergone to the Board's advantage, while the chances of the competitors are put outside all calculations of probabilities. Every competitor has to contend not only against nine rivals, but against the mysterious "any other party." Whatever may be the result the Lunacy Board will win. Whether any one of the ten is also to participate in the joy of victory is another question. However, eighty-three architects were emulous to play the game of hazard.

THE fate of the Manchester Canal Bill is watched attentively by contractors, and with reason, for the works are estimated to cost 7,292,972*l.*, and there never was a time when so large an expenditure was more desirable. The greater part of the sum or 5,224,384*l.* is put down for the navigable canals; the docks are to cost 1,320,135*l.*; the deviations of railways and branches, 457,292*l.*; opening bridges, 129,942*l.*; new roads, 77,529*l.*; locks, diversions, &c., 83,691*l.* An undertaking of the kind is not merely an enormous amount of earthwork and masonry. It will require for its completion many warehouses, sheds, &c., and manufacturers would soon discover the advantage of erecting buildings in proximity to the canal.

AN American engineer, Mr. J. C. GOODRIDGE, jun., has published a pamphlet in which it is asserted that the Washington Monument, which was only lately completed, is unsafe. The shaft, he says, is 55 feet square, resting upon a loose mass of rubble masonry without tensile strength, and is stated in the reports of the engineers as unable to bear any transverse strain. Under this shaft of 55 feet square is left an opening 45 feet square. The walls of the monument are 15 feet thick, and the new foundation extends but 5 feet under this wall, leaving that portion of the shaft giving the greatest pressure as a dead load to be carried by the clay portion of the upper soil. The greatest weight comes where the new foundation stops. The load on the concrete is about 11 tons per square foot, or 200 lbs. per square inch, and if an allowance is made for wind pressure it rises to 14 tons. The concrete is considered to be ill-adapted for the work, as it is made up of one part cement, two parts sand, three parts pebbles, and four parts broken stone. Mr. GOODRIDGE says that it has been demonstrated that a monument can be raised to the height of 555 feet on such a soil as underlies the Washington Monument, but that it can be sustained there has to be proved. The constructors of the monument can reply that a great many structures have been proved to be in danger and by right should fall, but somehow they continue to exist.

In noticing the judgment of the Court of Appeal in the Whitechapel underpinning case, we suggested that it was not likely to be accepted unconditionally. The Lords Justices considered that the railway company were within their rights in underpinning a house, although the concrete was the counterfort of a retaining wall. In spite of the

precedent, the lessee of a house near the South Kensington Station applied, in the Vice-Chancellor's Court, to restrain the company from doing exactly the same kind of work in connection with the subway to the Horticultural Gardens. The plea of the company was the usual one—that they were acting under Parliamentary powers, and in the course of their operations had found it necessary to make these excavations, that the house had been carefully underpinned, and the excavation, as fast as made, filled in with concrete, &c. Vice-Chancellor BACON took the opposite view to the Court of Appeal in the former case, and decided that the company's proceedings were unlawful and unauthorised. An injunction was granted without any limitation.

THE "dowsers," or men endowed with the power of using the divining-rod, are supposed to have been extirpated by the advance of science. But members of the fraternity still exist in England, and it is possible to obtain a printed list of them. About a fortnight back a dowser named MULLINS, from Chippenham, exhibited his skill on the estate of Earl BEAUCHAMP at Madresfield, before a large party. He was armed with the forked branch of hazel which is the customary instrument of the diviners. MULLINS, who was a stranger to the place, was brought into the garden, and no sooner had he arrived at a spot which is above a reservoir for the supply of the house, than an indication of its existence was given by the turning of the branch. In a meadow having an underground pipe the same phenomenon was witnessed, and the movement was on one occasion so sudden as to break the hazel. It was found that a thorn-branch answered in the operator's hands, but hazel has the preference. The proceedings were conducted with simplicity, and there was nothing of the charlatan about the dowser in this case. He has turned his skill to account by discovering underground springs on Earl BEAUCHAMP's property, and he claims to have the power of discovering all minerals except silver by means of hazel. The usual explanation is to say that the divination is a delusion—and there is an end to inquiry. In this case there were several witnesses, and they could not all be deceived. It was observed that the movement was less apparent over water running through glazed pipes, and the difference suggests the operation of some cause which might be discoverable on investigation.

M. DE MAERE gives some fresh details about the projected Belgian canal of which we spoke last week. He states in *La Belgique Maritime* that Mr. LEE, who has had experience of such works at Cronstadt and St. Petersburg, has recently examined the project on behalf of an English company formed to execute the works, if it can get the necessary concessions from the Belgian Government. It is proposed to run the entrance piers out to a distance of 900 metres, and enlarge and deepen the port at the mouth of the canal. This, with the railway works, will, it is now estimated, bring the cost of the undertaking up to 44 million frs., or 1,760,000*l.* sterling. BUONAPARTE, it seems, used the central dock at Bruges to construct some of his gunboats wherewith to invade England, but the dock itself was completed in 1665.

A CORRESPONDENT of the *Scientific American* says that when constructing a new house last year, he had birch folding doors introduced against the protest of his architect, who had never heard of birch-wood being used for that or any analogous purpose. The result is most satisfactory to all parties, and to none more than the architect, who originally preferred the use of walnut or cherry. Possibly the builder took especial care in the selection of his material, so as to convince the architect of his error and his (the builder's) superior knowledge; but, however that may be, the black birch doors, which in texture resemble satin-wood, and in colour dark cherry, are the admiration of every one who has seen them. The correspondent may find that his architect was right, for, in spite of its appearance, black birch, the *Betula nigra* of the botanists, is not considered to be a wood that lasts, and, although there is little strain on folding doors, a wood that is much affected by time is out of place there.







The Architect, March 28<sup>th</sup> 1885.

Embossed  
Wall pattern







LINCRUSTA - WALTON DECORATION .  
BY LEWIS F. DAY.











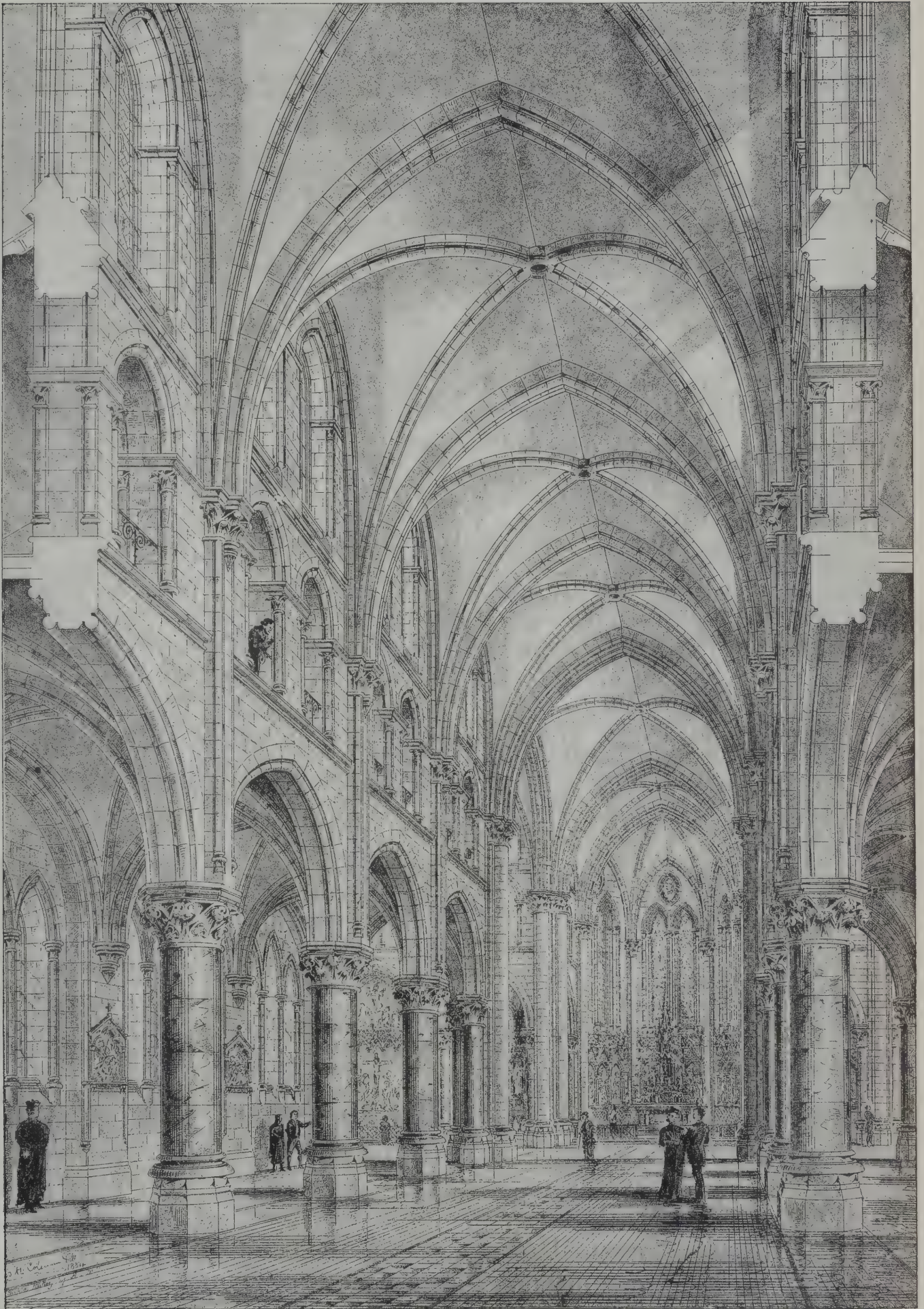
The Architect, March 28<sup>th</sup> 1885.



"INK PHOTO", SPRACUE & CO, LONDON.

O'CONNELL MEMORIAL CHURCH OF THE HOLY CROSS,  
CAHERCIVEEN, CO. KERRY.  
THE VERY REV<sup>d</sup> CANON BROSNAN, P.P.  
G.C. ASHLIN, ARCHITECT, 1, COLLEGE STREET, DUBLIN





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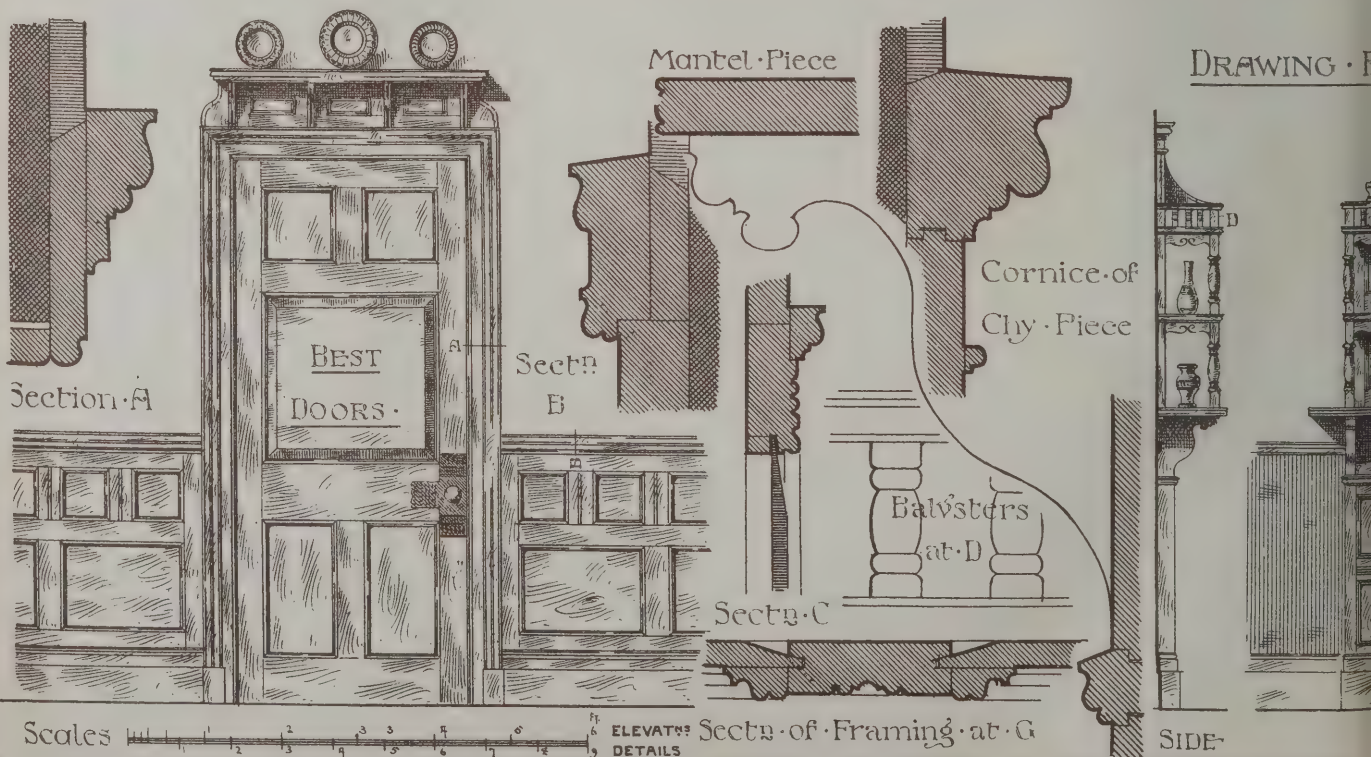




ENTRANCE FRONT



GARDEN FRONT

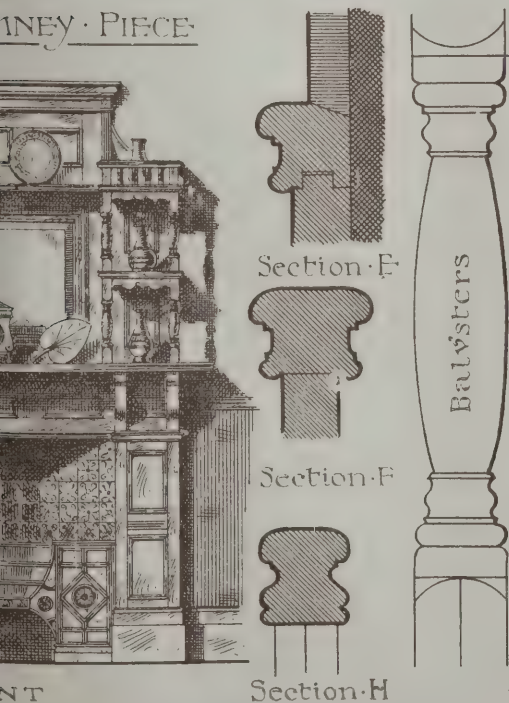


AN ESSEX DOCTOR'S HOUSE





WINEY PIECE



STAIRCASE









## ILLUSTRATIONS.

DESIGN FOR LINCRUSTA-WALTON DECORATION.

THE mechanical perfection to which a material like Lincrusta-Walton can easily be brought has been hitherto the chief source of its shortcomings. Mechanical precision has been sought too exclusively, and obtained by the sacrifice of a certain softness of effect, which in less mechanically perfect manufacture is not difficult to get.

Mr. LEWIS F. DAY'S design, which we publish this week, and which was modelled in the artist's studio under his direction, is meant to prove that any hardness in Lincrusta designs is not inseparable from the material, which is capable of the most delicate, as of the most precise, workmanship. It will be seen that this design, which is a "drop" pattern, has been contrived so that the repeat is wider than the width of the material, by which means a bigger and broader effect is produced than would otherwise be possible within the same space.

The style adopted is Renaissance, but treated with a certain contempt for precedent, except in so far as there was something to be learnt from it.

AN ESSEX DOCTOR'S HOUSE.

OUR illustration is a reproduction of the architects' original sketches for a doctor's house recently erected, with some modifications, in Essex. The plan has been so arranged that the doctor's house, while easy of access from the residential part of the house, are quite distinct from it, the study, consulting-room, surgery, and waiting-room being *en suite* on the entrance front of house near the carriage entrance. It will be seen from the plan that the special features required in a medical man's house have been obtained by the architects in a very economical form. The detail of the internal fittings has been carefully studied, the sketches of which give a good idea of the work.

The building externally is faced with Reading bricks and red upright tiling, the roofs being covered with Broseley tiles.

The work has been satisfactorily carried out by Mr. D. TAYLOR, contractor, of Reading, from the designs and under the superintendence of Messrs. CHAS. SMITH & SON, architects, of Reading.

THE O'CONNELL CHURCH, CAHIRCIVEEN.

IT was lately proposed by the Very Rev. Canon BROSNAH that a memorial of the late DANIEL O'CONNELL should be erected in his native town. Subscriptions were sent from the Irish people in many parts of the world, as the building was considered to possess a national character. Mr. G. C. ASHLIN, A.R.H.A., was appointed architect, and we publish this week reproductions of two of his drawings.

## THE ARCHITECTURAL ASSOCIATION.

THE twelfth ordinary meeting of the Association was held on Friday evening, the 20th inst., Mr. Cole A. Adams, president, in the chair. The following gentlemen were elected members:—Messrs. M. E. Sellin, R. W. Roe, H. D. Wilkinson, W. G. R. Bousfield, T. Moore, J. W. Lee, F. E. Haarer, and R. H. Mew.

A letter was read from Mr. Thos. W. Aldwinckle, who wrote offering a sum of 20*l.* this year or next year for a travelling studentship, to be held under the same conditions as the Association Travelling Studentship.

A vote of thanks was awarded in connection with the previous visit.

Mr. PENROSE, M.A., then delivered a lecture on "Proportion in Architecture, especially as exemplified in the Works of the Greeks."

The lecture was listened to with great interest. It consisted in an explanation of drawings, and plans and sketches on the black-board. A report of the lecture will appear next week.

A Bridge is to be constructed over the River Jordan, near the ancient city of Jericho, by order of the Turkish Government. It will be 45 mètres long and 5 mètres wide.

## THE PARIS EXHIBITION OF 1889.

THE report by M. Antonin Proust, president of the commission appointed to organise the Universal Exhibition of 1889, has been published in the *Journal Officiel*. It deals first with the choice of a site. In conformity with the wish expressed by the Municipal Council of Paris that the exhibition should be on the Champ de Mars, the commission recommends that the site shall include, on the left bank of the Seine, the Champ de Mars and the space extending from the Avenue de la Bourdonnaye to the Ministry of Foreign Affairs, and, on the right bank of the river, the Trocadéro from the Avenue d'Antin to the avenue which bounds the Palais de l'Industrie on the side of the Place de la Concorde. The *concours*, requiring a wide space, should, in the opinion of the commission, be conducted at Vincennes.

With regard to the constructions which are to be erected, it is suggested that there should be two great divisions—first, those devoted to purposes connected with the manifestation of ideas; and, secondly, those devoted to the exhibition of products. The commission recommends that greater development should be given to conferences and international congresses, the success of which was great in 1878. The libraries, laboratories, and halls for the conferences will be placed near one of the entrances to the Palais de l'Industrie. There *fêtes* will be organised and prizes distributed. In the space comprised between the avenue parallel to the Place de la Concorde and the Avenue d'Antin all that relates to education will be grouped.

The Seine will divide the two great categories, the manifestation of ideas being on the right, and the exhibition of products on the left bank. The river will be crossed by a bridge doubling the Pont des Invalides, which by its height will not interrupt the traffic on the right bank. The esplanade of the Invalides will be devoted to the Colonial Exhibition, and to that of living animals, which will only last a fortnight. A part of the Quai d'Orsay and the Quai d'Alma will be the site of the Agricultural Exhibition. M. Tisserand has prepared a scheme for this section, the object of which will be to give exact ideas of the conditions and methods of culture in each country.

Two palaces will be erected, one near the Avenue de la Bourdonnaye, devoted to the arts, the other near the Avenue de Suffren, to the sciences. The commission, being consulted with regard to the permanency of a part of the constructions to be erected in the Champ de Mars, recommends that these two palaces just referred to should be preserved. It estimates at 50 millions the total of the expenses necessary for the various buildings to be constructed and fitted up. The receipts anticipated to cover these expenses are grants from the city and the State, 28 millions; admissions day and night, 14 millions; concessions, 15 millions; sale of the materials, 1 million—in all, 58 millions. Thus a profit will be left of 8 millions to meet contingencies.

The commission recommends that exhibitors should be made to pay for the space allotted to them, and that in return they should be allowed to sell their products. The report concludes with a proposal to found an Association de Garantie, with a capital of not less than 10 millions, and not exceeding 24 millions, to which, however, no appeal will be made until the 28 millions have been spent, and the total receipts of the exhibition have proved insufficient.

## ARCHITECTURAL COMPETITIONS IN THE POTTERIES.

WITHIN the last few weeks, writes a correspondent of the *Staffordshire Advertiser*, there have been two architectural competitions of some importance in North Staffordshire, one for two schools at Longton for the accommodation of 700 children in each, and the other for public buildings in Newcastle. In the former an expenditure of about 7,000*l.* is contemplated, and of about double that amount in the latter. These sums are to be provided out of rates, and therefore it is to be supposed that a great number of people are interested in them. With regard to Longton—for the present, at all events—all is over as to the selection of designs, which, to the number of twenty-three, were submitted on the 9th inst., and on the following day the School Board met at three o'clock and dispersed at five o'clock, having examined the designs, considered the reports and estimates, compared their several merits, and selected one set which in the unforeseen termination of events turned out to have been submitted by a son of the chairman of the Board. Immediately following this decision there appeared in the columns of a contemporary a letter from the rector of Longton, he being a member of the School Board, wherein it was stated that there had been a want of consideration in the selection, and that he had appealed in vain for more time, care,



and thought to be given to the designs. To wash his hands of the apparent stain he had written a formal protest to the Education Department. This letter moved the competitors to action, and they have resolved that if legal proceedings will avail them, they will not shrink from taking them. That a moral injustice has been done wants no argument to prove, as every one must see that the time given to the selection was altogether inadequate even for the greatest experts, had such been employed in the work.

In the Newcastle competition it has been decided to call in a professional adviser, and it is expected that the corporation will act on his advice in awarding the premiums. The drawings submitted in this case amount to no less than thirty-seven sets, and they average perhaps six sheets each, so that upwards of two hundred and twenty drawings have to be considered. No one can look round the room where the designs are hung without seeing that brains have been heavily taxed and hands busily employed to produce the schemes there displayed. As the awards have not yet been made it would hardly be fitting to enter upon a detailed criticism of the works submitted, but this may be done at another time. The subject is varied and a somewhat complex one, and the site is one of decided peculiarities. It is very irregular in form, having a long frontage to Marsh Street and a narrow one to the Ironmarket, and a roadway has to be provided out of the site between the two streets. This not only reduces the area of the site, but narrows the small frontage to the Ironmarket. All the designs show the communication between the two streets on the lower side of the land. More or less use is made of this private road for frontages, approaches, and other purposes. The principal portions of the proposed buildings are a large assembly-room, a free library, with reading-rooms, and two swimming-baths, and a number of private baths. Some of the competitors have added Turkish baths, which were not specified to be included in the instructions to architects. Nearly all the designs show the assembly-room on the first floor with its longer axis at right angles to the Ironmarket, with the accommodation for the free library below it. The baths are generally placed towards Marsh Street, but vary in their disposition considerably. One design differs from all the others by placing the assembly-room near the middle of the site in the shape of a large octagon, with a great reading-room beneath it. There are a few of the designs which evidently emanate from amateurs, but for the most part immense pains have been taken to master the subject, and in many instances great results have been accomplished in a masterly manner. The Corporation stipulated that the cost of the buildings and fittings is not to exceed 12,000*l.*; and that the commission would not be given to anyone whose plan could not be carried out for that amount *plus* 10 per cent. as a final margin. Perhaps all the best designs will have to go unpremiated on the score of excessive cost, but even then there will remain half a dozen sets at least which will well merit selection. An experienced assessor will by study be able to set aside the feeble, the impractical, and the unsuitable, and in the course of time to lay his finger on the three designs most marked for their grasp of the subject, its careful manipulation and masterly completion, taking strongest account of the question of cost. In this way the Newcastle Town Council will have been relieved of a responsibility which rightly attaches to professional skill only, and will have discharged a duty conscientiously; yet withal it may possibly be found that the buildings suited to their purposes, the site, and their purse have even yet to be designed.

## Bygones.

*"Antiquity after a time has the grace of novelty."*—HAZLITT.

### SIR HENRY WOTTON ON PAINTING AND SCULPTURE.

THE "Elements of Architecture collected by Henry Wotton, Kt., from the Best Authors and Examples" is one of the earliest English books on architecture, and is the more remarkable from being the work of an amateur. It is the fruit of long residence in Italy at a time when art was still a power. In 1590 Wotton first set out for the Continent, and he remained abroad for nearly nine years. "In Rome, Venice, and Florence," says his biographer, Isaac Walton, "he became acquainted with most eminent men both for learning and all manner of arts, as picture, sculpture, chemistry, architecture, and divers other manual arts, even arts of inferior nature, of all which he was a most dear lover and a most excellent judge." When James the First became king, he resolved to employ

Wotton as an ambassador, and he was offered France, Spain, or Venice. He selected the last for "best suiting with his genius, who did ever love to join with business study and trial of natural experiments, for which Italy, that darling of Nature and cherisher of all arts, is so justly famed in all parts of the Christian world." Wotton lived in Venice for about twenty years. He returned about the time of James's death, bringing with him some German and Italian artists, and it would seem as if the payment to them impoverished himself. Wotton was fortunate in obtaining the provostship of Eton, where, says Walton, "his very food and raiment were plentifully provided in kind, where he was freed from corroding cares, and seated on such a rock as the waves of want could not possibly shake." It was at Eton he wrote his book on architecture. Having no longer despatches to indite, he needed some employment for his pen, and as he was too honourable a man to write revelations of courts and courtiers, he selected architecture as a theme. He was aware of the objections that could be raised against him as an amateur, and it is evident Wotton feared some might think that his love of the art never induced him to patronise builders. "I must shrink up to my shoulders," he said, "as I have learned abroad, and confess indeed that my fortune is very unable to exemplify and actuate my speculations in this art." His book was written for amateurs, and it was received with much commendation. The following extract, although one of the most interesting passages in the book, is not so well known as the remainder. In writing of pictures and statues in relation to architecture, Wotton was speaking of what he had studied, and he was less of a bookmaker than when drawing information about the orders from Vitruvius:—

First, therefore, touching painting, there does occur a very pertinent doubt, which has been passed over too slightly not only by some men, but by some nations—namely, whether this ornament can well become the outside of houses, wherein the Germans have made so little scruple that their best towns are the most painted, as Augusta and Nuremberg. To determine this question in a word. It is true that a story well set out with a good hand will everywhere take a judicious eye; but yet withal it is as true that various colours on the out-walls of buildings have always in them more delight than dignity. Therefore I would there admit no paintings but in black and white, nor even in that kind any figures (if the room be capable) under nine or ten feet high, which will require no ordinary artist, because the faults are more visible than in small designs. In unfigured paintings the noblest is the imitation of marbles, and of architecture itself, as arches, friezes, columns, and the like.

Now for the inside, there grows another doubt, wherein grotesque (as the Italians) or antique work (as we call it) should be received, against the express authority of Vitruvius himself (lib. 7, cap. 5), where "Pictura," he says, "fit ejus quod est seu potest esse," excluding by this severe definition all figures composed of different natures or sexes, so as a siren or a centaur had been intolerable in his eye. But in this we must take leave to depart from our master, and the rather because he spoke out of his own profession, allowing painters (who have ever been as little limited as poets) a less scope in their imaginations even than the gravest philosophers, who sometimes do serve themselves of instances that have no existence in nature, as we see in Plato's "Amphisbæna" and Aristotle's "Hirceo-cervus." And, to settle this point, what was indeed more common and familiar among the Romans themselves than the picture and statue of *Terminus* even, one of their deities?—which yet, if we well consider, is but a piece of grotesque. I am, for these reasons, unwilling to impoverish that art, though I could wish such medley and motley designs, confined only to the ornament of friezes and borders, their most proper place. As for other storied works upon walls, I doubt our clime be too yielding and moist for such garnishment. Therefore leaving it to the dweller's discretion, according to the quality of his seat, I will only add a caution or two about the disposing of pictures within.

First, that no room be furnished with too many; which, in truth, were a surfeit of ornament, unless they be galleries, or some peculiar repository for rarities of art.

Next, that the best pieces be placed not where there are the least but where there are the fewest lights; therefore, not only rooms windowed on both ends, which we call through-lighted, but with two or more windows on the same side, are enemies to this art; and sure it is that no painting can be seen in full perfection but (as all nature is illuminated) by a single light.

Thirdly, that in the placing there be some care also taken how the painter did stand in the working, which an intelligent eye will easily discover, and that posture is the most natural; so as Italian pieces will appear best in a room where the windows are high, because they are commonly made to a descending light, which, of all others, doth set off men's faces in their truest spirit.

Lastly, that they be properly bestowed for their quality, as fitly for their grace: that is, cheerful paintings in feasting and



banqueting-rooms; graver stories in galleries; landscapes and bosage and such wild works in open terraces, or in summer-houses (as we call them), and the like.

And thus much of painting, which let me close with this note, that though my former discourse may serve, perchance, for some reasonable leading in the choice of such delights; yet let no man hope by such a speculative erudition to discern the masterly and mysterious touches of art but an artist himself; to whom, therefore, we must leave the prerogative to insure the manner and handling, as he himself must likewise leave some points, perchance of no less value, to others; as, for example, whether the story be rightly represented, the figures in true action, the persons suited to their several qualities, the affections proper and strong, and such like observations.

Now for sculpture, I must likewise begin with a controversy as before (falling into this place), or let me rather call it a very meet fancy, strangely taken by Palladio, who having noted in an old arch or two at Verona some part of the materials already cut in fine forms and some unpolished, doth conclude (according to his logic) upon this particular, that the ancients did leave the outward face of their marbles or freestone without any sculpture till they were laid and cemented in the body of the building; for which likewise he findeth a reason (as many do now and then very wittily even before the thing itself be true) that the materials being left rough were more manageable in the mason's hand than if they had been smooth, and that so the sides might be laid together the more exactly; which conceit, once taken, he seems to have further imprinted by marking in certain storied sculptures of old time, how precisely the parts and lines of the figures that pass from one stone to another do meet, which, he thinks, could hardly fall out so right, forgetting, while he speaks, of ancient things, the ancient diligence, unless they had been cut after the joining of the materials. But all these inducements cannot countervail the sole inconvenience of shaking and disjoining the commissures with so many strokes of the chisel, besides an incommodious working on scaffolds, especially having no testimony to confirm it that I have yet seen among the records of art. Nay, it is indeed rather true that they did square and carve and polish their stone and marble works even in the very cave of the quarry, before it was hardened by open air. But (to leave disputation) I will set down a few positive notes for the placing of sculpture, because the choosing hath been handled before. That first of all it be not too general and abundant, which would make a house look like a cabinet, and, in this point, moral philosophy which tempereth fancies is the superintendent of art. That especially there be a due moderation of this ornament in the first approach, where our authors do more commend (I mean about the principal entrance) a Doric than a Corinthian garnishment, so as if the great door be arched with some brave head cut in fine stone or marble for the key of the arch, and two incumbent figures gracefully leaning upon it toward one another, as if they meant to confer. I should think this a sufficient entertainment for the first reception of any judicious sight, which I could wish seconded with two great standing statues on each side of a paved way that shall lead up into the fabric, so as the beholder at the first entrance may pass his eye between them. That the niches if they contain figures of white stone or marble be not coloured in their concavity too black. For though "*Contraria juxta se posita magis illucescunt*" (by an old rule), yet it hath been subtly and indeed surely noted, that our sight is not well contented with those sudden departures from one extreme to another; therefore, let them rather have a dusky tincture than an absolute black.

That fine and delicate sculpture be helped with nearness and gross with distance, which was well seen in the old controversies between Phidias and Alcmeneas about the statue of *Venus*, wherein the first did show discretion and save labour, because the work was to be viewed at good height, which did drown the sweet and diligent strokes of his adversary—a famous emulation of two principal artists celebrated even by the Greek poets.

That in the placing of standing figures aloft, we must set them in a posture somewhat bowing forward, because (says our master, lib. 3, cap. 3, out of a better art than his own) the visual beam of our eye extended to the head of the said figures, being longer than to the foot, must necessarily make that part appear further; so as to reduce it to an erect or upright position there must be allowed a due advantage of stooping towards us, which Albert Dürer has exactly taught in his fore-mentioned geometry. Our Vitruvius calls this affection in the eye a resupination of the figure, for which word (being in truth his own, for aught I know) we are almost as much beholding to him as for the observation itself: and let thus much summarily suffice touching the choice and use of these adorning arts. For to speak of garnishing the fabric with a row of erected statues about the cornice of every contignation or storey were discourse more proper for Athens or Rome in the time of their true greatness, when (as Pliny records of his own age) there were near as many carved images as living men; like a noble contention, even in point of fertility, between art and nature, which

passage does not only argue an infinite abundance both of artists and materials, but likewise of magnificent and majestic desires in every common person of those times more or less according to their fortunes; and true it is indeed that the marble monuments and memories of well-deserving men, wherewith the very highways were strewn on each side, was not a bare and transitory entertainment of the eye, or only a gentle deception of time to the traveller, but had also a secret and strong influence, even into the advancement of the monarchy, by continual representation of virtuous examples; so as in that point art became a piece of State.

## DESIGNS FOR METAL WORK.

THE following evidence was given by Mr. A. A. Willms before the Royal Commission on Technical Instruction:—

Mr. Willms, you are the chief artist in the firm of Messrs. Elkington & Co.?—Yes.

How many years have you held that post?—About 26 years.

Previously to that you were similarly employed in France?—I had the good fortune to be trained amongst the great decorative artists of France; amongst others Constant, Didier, Hugues, Protat, and Klagman.

Were you employed in France in designing for any special trade, or as a general designer?—In France we design for everything. I was really a sculptor and learnt modelling, and at the '48 revolution I was just completing my education, when I came to London.

At the age of 18 you were earning money as a designer?—Yes.

What was your training as a designer from the age of 14 to 18?—More for silversmiths' work and brass work.

Where did you receive your artistic education?—In Paris with some of those artists whose names I have mentioned above.

In their *ateliers*?—Yes; I was assisting at the decoration of the Louvre and other buildings. Till '48 I was in Paris. In the year 1848 I left Paris and came to London, and was there for three years.

What was your employment during those three years?—I worked for Messrs. Morell, silversmiths, in New Burlington Street.

Whilst you were engaged in the *ateliers* of these great designers did you also attend the art classes in Paris?—Yes; in Paris we had only one very prominent school, Lequien.

Was that a public school?—Yes, in the Marais quarter. It was a public school in the sense that everyone could attend it?—Yes.

Was it a cheap school?—It was very cheap, but there was something to pay.

Subsequently the city of Paris took over that school?—Yes, it was taken over by the city of Paris, and then it became a free school.

When you were employed in England as a designer, your mind was cultivated by contact with that of English designers, but you attended no school?—Yes.

After having been three years in England you returned to France?—Yes.

What was your employment on your return to France?—I started a studio for myself.

You had a studio in which you prepared designs for some of the great manufacturers of Paris?—Yes.

Were the young men whom you employed instructed exclusively by you or did they attend the art schools which existed in Paris at that time?—Many were students from the art schools, but they were principally from other studios.

You employed a number of artists whose instruction had been completed, and you had also apprentices whom you instructed?—Yes.

What was the course of instruction you gave to these apprentices?—Working in plaster, and drawing and modelling. I taught them especially to give great finish to the plaster models, in order that there might be sharpness in the castings.

Was the instruction which you gave to these apprentices similar to that which is now given in the art schools in Paris?—Yes; but they were constantly employed on such easy work as chandeliers, for instance, and objects for actual use.

In addition to the theoretical instruction which they received, your apprentices were at once employed upon the execution of useful works?—Yes.

You think that the students in the French *ateliers* get on more quickly than the students in any art school?—Of course.

Had the apprentices generally, before they came to you, any knowledge of drawing?—Yes, generally.

You chose your apprentices amongst those who had already



some knowledge, and who showed considerable ability in drawing?—Yes.

Do you consider it necessary for the designer that he should have a good theoretical and practical knowledge of art?—Of course.

A man must understand the principles of art and be a ready executant before he can commence the practice of design?—Yes; there are very few original designers who are worth much unless they have received a training in art.

Are you acquainted with the system which is now pursued in the art schools of Paris?—Yes; one of my friends who has taken the Prix de Rome is now at the head of the school of jewellers and silversmiths.

Is that established by the jewellers and silversmiths?—Yes.

That school is essentially a school of drawing?—Yes, and of designing.

The young men who receive instruction in that school apply the instruction they have received there to designing work, and for that work, I believe, the guild of silversmiths offer prizes?—Yes.

Is that similar to what is done by the Goldsmiths' Company in this country?—The apprentices in the goldsmiths' trade and the jewellers' trade have a school to themselves, and this is situated in the workmen's quarter.

But that school, established in a quarter convenient for the workmen, does not differ greatly from the art schools established by the municipality?—Not at all.

They are not specially taught designing for the trade?—They do not receive any special instruction in designing for silversmiths' work. They are taught general designing, and can apply this. Many of their special works are done on Sundays.

In point of fact the instruction given to these young men is of the same kind as that which is given in the art schools in Paris?—Yes.

You are acquainted, of course, with the instruction in the Birmingham Art School?—Yes.

How do you compare the instruction given in the Birmingham Art School with the instruction in the municipal schools in Paris, and in the jewellers' school in Paris?—It is very much the same. Mr. Jackson, the assistant master, is well acquainted with drawing, designing, and metal work, and knows how to direct. Mr. Jackson was with me 18 years before going to the School of Art as a teacher.

You consider Mr. Jackson a very competent master, and that the methods he pursues under the direction of the Science and Art Department are calculated to produce good designers?—Yes.

From your own experience have you any suggestions to make as to anything that might be done to make that school more efficient?—There are some things which could be introduced. Mr. Jackson addresses himself so well to practical work that he is able to do anything required, and he usually consults with me on matters with respect to which he desires advice.

You consider that one great advantage he possesses in directing the art instruction of a manufacturing town like Birmingham is that he is in contact with those who are executing designs for these manufactures?—Yes.

You consider that in order to form a good designer two things are essential—the first, that he shall have a good knowledge of art and a considerable facility in execution; and, secondly, that he shall understand the nature of the trade to which that art is to be applied?—Yes.

Have you visited the French schools in recent years?—I have only visited the school of M. Fossey.

How long is it since you visited the jewellers' school?—At the beginning of the last year.

You are acquainted with the system pursued in the jewellers' school in Paris?—Yes.

Has it occurred to you that there is more rapidity of execution by the students in that school than in the Birmingham school?—I have met with some men who are really adroit, and can do anything, but it depends on the nature of the men.

You are acquainted with the conditions of the South Kensington competitions?—Yes.

Do you think that more minuteness of finish is required by the South Kensington authorities than is necessary for the training of a good designer?—I never thought that great minuteness of finish was a good thing. The system which was formerly adopted of requiring great minuteness of finish is a waste of time, and I believe that that system has now been modified by the authorities of South Kensington, and the degree of finish now required is necessary. I speak of the school studies.

Can you trace any good effects from the Birmingham School of Art on the industry with which you are connected?—Yes, certainly. I have seen many young workmen who have become good designers, and who have become much better workmen, simply because they have learned in the School of Art. I have two workmen now who are good designers. The art teaching has certainly produced good results. Several of

the men have taken prizes offered by the Goldsmiths' Company.

Do you know anything of other decorative trades carried on in Birmingham?—I generally award the special prizes at the School of Art, and I so see the progress that is made. There are at the school more designers than there were some years ago.

I understand that Mr. Taylor gives instruction in the School of Art in painting. What do you consider to be the influence of this teaching with respect to industrial art?—I think that this has rather tended to diminish the amount of instruction given in designing.

Do you consider that to be desirable, in a town like Birmingham?—No; the object of the South Kensington instruction in art is not to make artists but to train designers, and any encouragement to painting, unless it be of the decorative class, interferes with the more important teaching of design.

You think that they become artists of a certain degree instead of becoming designers?—Yes.

Would you think it desirable that the students in the School of Art should learn chasing before they come to the works of Messrs. Elkington?—It would certainly be a good thing for them to do so. In Paris they intend to have a school for practical chasing and metal work.

You think that they would be more useful to Messrs. Elkington if they came to their works with more skill in chasing?—Certainly. Mr. Elkington said he should be quite ready to take any man already prepared.

Do you think it better to learn chasing in the works or in the school?—If they had a good master, and were sufficiently advanced, it might be done in the school. But they will never be so clever as they will become by the production of real practical work in the shop. Messrs. Elkington have now expert workmen, but when I came they had about thirty Frenchmen.

How have these workmen been trained?—They have been trained by practice. They have been apprentices, and as their abilities revealed themselves they have taken to that department which they have had a particular turn for. Some have become chasers, some casters, some damasceners, &c.

Where do you consider the young men can be better trained, in the workshop or in the school?—It will always be effected more quickly in the workshop. But it would be a good thing if you could take them while they are at school and give them an idea of the work in which they will in after life be engaged.

If they are at school they are earning nothing, and if they are in the works they are earning something?—Yes; still it would be an advantage if they could learn something of chasing in the school. It would be of considerable value if they could come with some knowledge.

Is there any other technical branch of metal-work which could with advantage be taught in the Art School in addition to chasing?—Yes, engraving might be taught, and all the other branches of metal-work in an equal degree. Fitting requires great care and skill.

Are there any apprentices at present received in Messrs. Elkington's works?—We take apprentices, but we do not care for them, because they so often turn out unsatisfactory. Formerly plenty were taken. Of course I mean bound apprentices. We find it is better to employ men rather than boys.

Would you say that English boys have as much natural aptitude for artistic work as French boys?—Yes.

An English boy who has had the same chance of education as a French boy would make as good a designer?—Yes.

Are there many Frenchmen employed for designing purposes in Birmingham?—I do not know that there are any.

Thirty years ago were many employed besides at Messrs. Elkington's?—Yes, there were some at Winfield's, some at Chance's, and some at Stourbridge and Kidderminster.

Would you say that there are as many art workmen employed now in Birmingham as formerly?—More.

Are they all English now?—Yes.

Where have they been trained?—Generally at the School of Art.

Would you say that the improvement in design and in art workmanship in England is mainly due to the schools of art?—Yes, certainly.

Would you say that there is much difference between English and French taste in art, taking your branches of silversmiths' work and brass work?—Yes; it is necessary that we should make a certain compromise between different styles, whilst in France they adhere much more strictly to pure styles. There is more fancy work in England. The furniture of England is much more advanced than the French.

Take Hardman's, and people executing work of that kind in brass and iron; do you consider that the English may rival the Continental work?—Yes; they generally take the earlier thirteenth century period, whereas in France they take the more florid Gothic.

You say that Messrs. Elkington prefer to take workmen who are already trained?—Yes.



Where are these workmen trained?—They come from different places. If a man applies for a situation we take him, and if he shows ability we keep him. One artist modeller came from London; one was a pupil of Carrier, and was trained at Stoke (Minton's).

With respect to your chasers, &c., where do you get them from?—Some from London; most of the best have been trained by the firm, by contact with the French people.

With respect to those who come from other works, are you aware how they have been trained?—They have been trained at Birmingham by attending the School of Art, &c. Even some enamellers went to the School of Art.

How do the chasers now obtain their knowledge of their trades?—Generally it is under other workmen.

They serve a kind of apprenticeship?—Yes. Large firms give freedom to workmen to take boys to work under them. Messrs. Elkington allow the men a certain annual sum to teach them.

You were away from England from 1852 to 1857?—Yes.

Did you find on your return that great progress had been made during those years?—Yes, I found that considerable progress had been made.

To what do you attribute that progress?—It was certainly due to the great collections at Marlborough House and the commencement of art schools. Everybody was started in art work by these exhibitions.

You already realised an improvement in artistic design?—Yes.

Was that influence not also due to the importation of French designers after the Exhibition of 1851?—Yes, of course that helped, combined with the enterprise of certain well-known firms.

You attribute the improvement in English design to the joint influence of French designers employed in England and the collections that were being formed?—Yes, of course. Indeed, Mr. Redgrave stated in his report on the Exhibition of 1855, with respect to the improvement then manifested:—"It would be unjust and ungenerous, in making this comparison between the two countries, to pass without remark the valuable assistance which British manufacturers have derived in matters of art and taste from foreign artists and workmen, and which our manufacturers themselves are always quite willing and desirous fully to acknowledge. Not only is this the case in the supply of designs for many of our great manufactures, but by the actual engagement of skilled foreigners, both artists and men of science, in many of our large manufactories." And he proceeds to name a number of artists then engaged in the direction or the production of works for the English manufacturers, to which I have added a few others omitted by him:—A. Vechte, E. Jeannest, A. Carrier, J. Arnoux, E. Prignot, H. Protat, Joyeau, E. Phoenix, Constant, Willms, Vernez, and J. Fossey.

### THE CROSS OF EDINBURGH.

AT the meeting of the Town Council of Edinburgh on Tuesday, the following letter from Mr. Gladstone was read:—

"10 Downing Street, Whitehall, March 21.

"Dear Lord Provost,—I have to request of your lordship and of the Council the favour of being allowed to undertake the restoration of the Mercat Cross. As your great historic city is the capital of Midlothian no less than the kingdom of Scotland, I earnestly desire, in the character of the representative of the county, to leave behind me this small but visible record of grateful acknowledgment and sincere affection, conferred in a form closely associated with local and with national traditions. The site which has been suggested to me as most suitable is the entrance to Parliament Square. I trust that my application will be most favourably entertained, and I have the honour to remain, my dear Lord Provost,

"Your most faithful and obedient,

"W. E. GLADSTONE.

"The Right Hon. the Lord Provost of Edinburgh."

The Council unanimously agreed to the proposal.

The Cross of Edinburgh was erected in 1617, to replace an earlier building of the same description which was removed by the civic authorities in order to widen and otherwise improve the High Street, on which it encroached. The Cross of 1617 consisted of an octagonal tower, 16 feet in diameter and about the same in height. That which gave it character, however, was the tall, slender shaft, surmounted with the royal unicorn, which rose from the platform on the top of the tower, and which formed the original Cross. On this platform the heralds and pursuivants assembled to make proclamation of royal edicts. There, also, criminals were punished by scourging, maiming, and execution. In course of time this Cross, like its predecessor, was found to interfere with the street traffic, and it was ordered to be demolished in 1756. The carved stones taken from it were much prized by antiquaries, and several of

them found their way to Abbotsford, where they were built into garden walls and incorporated with fountains. The pillar was unfortunately broken when in course of being lowered to the ground. The fragments of it lay for many years in the private grounds of a mansion near Edinburgh. A few years ago they were put together again, at the expense of Dr. David Laing, and the shaft was reared on a low pedestal within the railings on the north side of St. Giles's Cathedral, where it now stands. The original site of the Cross is marked by an octagonal device in the paving of the High Street, and at that spot royal proclamations are still made, and other ceremonies required by law to be "done at the Cross" are performed. The tower which it is proposed to restore is not that described in the fifth canto of "Marmion," though it also, according to Scott, was "a turret octagon," but is the more recent structure built in 1617. The "pillar'd stone," however, which is really the City Cross, is of very old date, and belonged to the original structure.

### EDINBURGH ARCHITECTURAL ASSOCIATION.

A PAPER on "Timber-front Houses to Lawnmarket and Milne's Court" was read by Mr. William Bruce, clerk of works, at the meeting of the Edinburgh Association on Monday. The author said that he had been employed at the additions recently made to the Free Assembly Hall. He was allowed to make plans, elevations, sections, &c., of the old buildings before they were demolished, and he thought every one would regret to see those relics of bygone years disappearing. He desired to mention a few of the ancient buildings which he hoped some members of the Association would keep a record of, or make carefully-measured drawings, showing all the old construction as well as the general design. Among the number thus commended to the notice of the Association were the house occupied as Ward's Lodging-house, High Street; John Knox's house; the old Playhouse, and others which had, more or less, timber framing and projections. Mr. Bruce proceeded to describe at considerable length the outstanding features of ancient structures in Milne's Court and vicinity, touching upon, in turn, the mason, joiner, plaster, and painter-work. Although, he said, there were numerous valleys on the roofs, the builders did not seem to have used any plumber-work there, and no such thing as flushing had evidently been thought of. As to slater-work, he said the timber-front house to the Lawnmarket was roofed with grey slates fixed with pins to pine battens, the slate pins being about an inch in diameter. Regarding the carpenter and joiner-work, he remarked that the advantage of good oak pins was noticeable. Some of the vaults in Milne's Court when opened up about two years ago were more like cesspools than vaults, and if all the vaults in old Edinburgh had sewerage discharged into them similar to those in that locality at that time, the sooner they were swept out of existence the better it would be for the poor people who inhabited the houses near those hot-beds of disease. He earnestly hoped that each and all of them, individually and as an Association, would expose and use their influence for the complete removal of all such deadly nuisances when discovered. At the close the thanks of the meeting were conveyed to Mr. Bruce by Mr. Browne, the president of the Association, who was in the chair.

### LAY OPINION ON ARCHITECTURE.

A PAPER on "Architects and Architecture" was read at the meeting of the Leeds and Yorkshire Architectural Society on Monday, by Mr. Walter Smith, Art Director of the Bradford Technical College. Mr. Smith began his address by referring to the progress and development of modern architecture in this country and in Leeds, and making some suggestions concerning the status and education of the architect, proceeded to congratulate all lovers of architecture upon the probability that the number of competitions was likely to be curtailed, by the profession generally refusing to compete unless a professional assessor were employed to report on the plans submitted. Architecture, Mr. Smith proceeded to observe, might be regarded as the parent of all the arts, not being influenced by the subordinate arts as it influenced them. After referring to the great revival of Gothic architecture and its kindred arts during the past 40 years, and repudiating the idea of partisanship having regard to styles, Mr. Smith said that contrast of style gave greater interest to a street façade. Alluding to the low state of architecture in Leeds as it existed prior to the erection of the Town Hall, and the impulse given by the latter building to a desire for better buildings, the lecturer proceeded to deal with the question of brick *versus* stone as a building material for manufacturing towns, and gave the preference to pressed bricks and terra-cotta and tile enrichments. With regard to the professional status of the architect, the lecturer remarked that



much required to be done. The profession needed safeguarding, as was the case with the lawyer, the doctor, and the soldier. All men should be debarred from entering it until they had displayed the necessary qualifications. Architectural associations ought to be able to do much to elevate the status of the architect, and he strongly advocated the practice on the part of pupils of drawing large cartoons in charcoal from the antique and living models, sketching and designing in clay of enrichments, and the like. After referring to the increased opportunities in the present day of acquiring professional knowledge, Mr. Smith concluded his address by expressing a wish that the Leeds Association might continue its successful progress. The usual vote of thanks to the lecturer concluded an exceptionally interesting address.

### NATURAL GAS.

THE use of natural gas as a means of heating has been attempted with success in some parts of the United States. This gas as a fuel has a history, but its importance has received recognition but recently. Where a steady flow has been struck the profits are very large and the outlay very small. One company in Pittsburgh, extended over one ward (a very small area), has an income of 300,000 dols. per annum. Taking coal at 5 cents per bushel, 1,000 cubic feet of gas is worth 8 cents, this making the flow of the largest well, Westinghouse, with a flow pressure of 17 lbs., worth 1,200 dols. per day, or upwards of 400,000 dols. per annum. The "gas belt" is stated to extend from the Pennsylvania oil regions in a south-easterly direction to the oil regions of West Virginia. The gas cannot always be struck within this belt. Instances are known of where two wells, sunk 100 feet from each other, one was a success and the other a failure. One drawback growing out of the indiscriminate sinking of wells is that abandoned holes fill with water and tend to seriously interfere with adjoining operations. The eagerness of owners of property near a producing well to secure their share of the gas stored underground simply leads to repeating the outlay to reach it. In some quarters there is a movement to consolidate interests with a view to systematic development.

These liquid or aeriform hydro-carbons belong to the same geological series as the bituminous coalfield, extending even to the shales of New York and the salt formations of New York, Michigan, and West Virginia, and probably to all the western bituminous coalfields. The remarkable discoveries of gas in and near Pittsburgh recently made are treated by some writers as novelties, but in fact they are enlarged illustrations of what was well known and frequently utilised in Central and Western New York as early as 1840. Many private houses burned gas as fuel in Ontario and Wayne counties, New York, and the towns of Fredonia and Westfield, Chautauqua county, have for nearly forty years been lighted by natural gas found in the shales of the carboniferous series cropping out there. Also, in Virginia, the salt works of the Upper Great Kanawha Valley have been boiled by the blowing gas of the coal formations there since about 1850, the stratum yielding gas being pierced at a depth in that valley of one to two thousand feet. Gas was known and utilised, in fact, long before the oil was believed to have commercial value, although both gas and oil belong to the same geological era, and are almost interchangeable under some conditions. Gas wells were utilised in Eastern Ohio forty years ago, but they were not so valuable as those in the New York shales and at Erie, Pennsylvania.

Twenty-five years after natural gas was found and made valuable, the discovery of petroleum threw everything else into the background, and the hundreds of gas wells developed in boring for oil were almost neglected. The gas was allowed to waste, and when oil was not found the borings were filled up. All the petroleum formations are full of gas, and the time has come to utilise it simply as fuel. The Pittsburgh basin is a vast reservoir of natural gas, which probably extends to Kanawha on the south, and indefinitely westward beneath the bituminous coal-fields and the underlying shales. It is as great a property possibly as the oil, and it is co-extensive with the coal. While its transportation to great distances does not now appear practicable, it must be remembered that oil has had a victory over natural impossibilities in the pipe-line transportation that may prepare us for gas-pipes hundreds of miles in length. It is noticeable that the sandstones and shales surrounding the coal-fields proper are all more or less charged with natural gas. The want of its practical use is, therefore, likely to be even wider than the coal-mining or oil-yielding fields.

Scientific definitions of the quality and compositions of this gas are few. It is a simple hydro-carbon, entirely free from sulphur, and almost absolutely pure. In combustion it yields no smoke or soot, and it does not blacken the stove or the fixture in which it is burned. The heat is intense, without the necessity of blowing oxygen or superheated steam into the furnace to make the combustion perfect. With its well-known superiority in this respect, it is surprising that it has not been

sought for by many smelters of refractory metals, steel makers, and others. On the Great Kanawha the long ranges of salt pans are heated with the precise scale of decreasing temperatures desired to bring the liquid slowly to crystallisation at the remoter pans while very hot when first struck by the gas.

The excitement created at Pittsburgh by the gas wells recently struck there indicates a systematic attempt to utilise it in the iron and steel works in place of coal. In the first trials the gas was brought a long distance from Butler county, and for several years Messrs. Spang, Chalfant & Co. have used it in their rolling mills at Sharpsburg. The Oliver-Roberts wire rod mill, of South Pittsburgh, began using it on June 14, and the Jefferson Iron Works, of Steubenville, Ohio, have struck a very large vein of gas, which they are prepared to use. The Westinghouse well, at Pittsburgh, recently struck, is considered ample proof of the abundance of the supply within easy reach of the ordinary boring machinery for all the requirements of the vast iron and steel industries of Pittsburgh and its vicinity. The calculated value of the gas flow of the Westinghouse well as fuel is 1,200 dols. per day, or 400,000 dols. per annum, which is an easier form of raising fuel than by mining so much coal.

Many incidents as to the development of gas in salt boring and coal mining are brought to light in the notices already made public, one important case being as far south as St. Stephens, in Southern Alabama, where the salt wells opened during the late war showed great quantities of gas. The whole of Western Alabama abounds in coal, oil, and gas, and probably the entire basin of the Mississippi, wherever salt water or coal is found, will be available as a source of natural gas.

The use of petroleum for purposes of ordinary heating is rapidly increasing, and all the devices employed for effecting combustion convert the oil into gas as the first step. When this change is effected in pure oils the gas is precisely like the natural gas, and its combustion is without soot or other deposit. When natural gas cannot be found the oil can be used economically as the cheapest of all fuels, in fact, other than gas, since there is no waste, and there need be no heat generated which is not utilised. The natural gas of the blowing wells, however, is incomparably cheaper than oil can be, and if developed as rapidly as now appears likely, it will revolutionise the industries of the Mississippi Valley. The combustion of natural gas is nearly perfect, what little flame there is attending its burning being of a pure rose colour, and almost entirely free from smoke. The experiments thus far made have not satisfactorily demonstrated the relative merits of gas and coal as fuel, but the results from such trials as have been made are largely in favour of the natural gas.

The town of East Liverpool, Ohio, about forty-five miles from Pittsburgh, was the first to utilise natural gas for heating and lighting purposes. Imbued with the idea that their town was on the oil belt, numerous wells were sunk some twenty-five or twenty-six years ago, which struck such a heavy vein of gas as to stop further drilling. It was not difficult to discover the highly inflammable nature of the gas, and they set about devising ways and means to put it to use. Pipes were laid through the streets, and connections made with the houses. Experience soon demonstrated that, while it was but poorly adapted for light, its heating properties were undeniably good. It fell naturally into disfavour when the further fact was discovered that it was an unhealthy as well as a poor illuminant, being provocative of headache and languor; but it is still used in the street lamps. It is undeniably cheap, as the company supplying it charged but 20 cents per month per burner for its use, and 2 dols. per month per furnace or stove, with no restriction as to the amount burned. So cheap is it that the street lamps are never extinguished, but allowed to burn day and night. All efforts to regulate the flow were unsuccessful, and it was found impossible to register the amount consumed with ordinary gas-meters, and their use was long ago abandoned. The danger of its careless use has been demonstrated in East Liverpool by numerous fires, as well as by an explosion totally destroying a large brick building, and causing the loss of several lives.

The duration of life of the gas wells in this place yet remains to be decided, as those first drilled are still producing as largely as at first, or, where there is a diminution, it is caused by the filling up of the well with dirt, and the flow of gas can always be restored to its original volume by cleaning out the casing. The pressure is immense, and at night, when the gas is lighted, the flow shoots into the air a hundred feet, and its roar can be heard several miles away. Manufacturers are busily engaged in estimating the probable cost of its introduction into their establishments, and many predict that through its general adoption as a fuel the advantages of Pittsburgh as a manufacturing site will be increased a hundredfold, and that within five years it will cease to be known as the smoky city.

A New Presbytery is to be built at Alexandria from designs by Messrs. Pugin & Pugin.





### The Colonnade of Burlington House.

SIR,—In the north-west corner of Battersea Park lies prone on the earth, or rather sticking in the mud, the nearly complete structural remains of the screen, colonnade and gateway of old Burlington House, where it was placed some years since on its removal from Piccadilly. Some care seems to have been taken to place each stone in proper juxtaposition, the whole facing skyward ready for re-setting up. Well preserved generally it was, except here and there: the carvings somewhat blunted by exposure, the family ciphers and crests clean cut and bold, the interesting alternations of the rusticated columns, the massive voluted wings of the pediment, and last but not least, the lions with some other details being enclosed within some rails to corrode by themselves.

But more interesting still, the great massive door, with its huge knocker, iron fittings, hinges, all complete, were placed also apart. Here year after year have multitudes of children scrambled and gambolled over these relics, till every carved detail and projection has yielded to the constant abrasion, and now in little over a dozen years the whole is well-nigh destroyed, most certainly marred beyond hope. The ponderous doors have literally disappeared piecemeal, knocker, hinges, everything, leaving but one poor frayed fragment to tell the story. This doorway figures in Hogarth's *Man of Taste*, where Pope stands upon a scaffold whitewashing it, and bespattering the coach of the Duke of Chandos; lampooned also by Pope as Timon. One of the veritable lions is here seen. This fact is additionally interesting, as the print was afterwards suppressed. Now let me quote Leigh Hunt, in his delightful little book, "A Saunter through the West End." Says my author:—"The loss of one thing in the Burlington wall might be regretted! The gate there is worth looking at. It is the design of Pope's friend, and is no mean evidence of his eye for proportion and suitability."

Who plants like Bathurst and who builds like Boyle?

cried the poet. Boyle was the family name of the first Earls of Burlington. . . . Through this gate, besides Pope, Handel went, and Gay. The latter mentions their visits in his poem of 'Trivia'; or, Art of Walking the Streets."

Sir William Chambers, in his "Treatise on Civil Architecture," says:—"Few in this vast city suspect, I believe, that behind an old brick wall in Piccadilly there is one of the finest pieces of architecture in Europe." Walpole speaks in raptures of the colonnade, and all agreed that it was about the best example of this style introduced into England in 1617 by Inigo Jones.

Surely all this was worth preserving. Why, it would have been eagerly bought up for America to re-erect in public park or place; without over-estimating the above panegyrics, the historical interest alone should have been sufficient to rouse up some effort. The matter, I believe, was brought before Parliament during the time that Lord Henry Lennox was First Commissioner, and has been noticed in the public press without avail.

Yours obediently,

March 18, 1885.

ANDREW REID.

### The New Street from Bloomsbury to the Haymarket.

SIR,—It is not often that the Metropolitan Board of Works make a mistake in regard to any of its great undertakings, and the public is largely indebted to that useful body for the vast improvements made of late years in the Metropolis. But corporations as well as individuals are not infallible, and that there *has been* a serious error committed in connection with the new street now in the course of formation under its supervision, between Bloomsbury and the Haymarket, must be patent to the judgment of all who look at the matter either from a practical or architectural point of view.

This new street is immediately connected with the main artery from east to west, at a point where there is an enormous traffic, and instead of the approach thereto and the thoroughfare itself being in a *direct line of view* from Hart Street and Holborn, and *vice versa*, there is a most dangerous curve occasioned by the projection of the public-house at the corner of Duke Street, and a few feet of the adjoining building, which the Board has most unwisely allowed to be brought out in a line with the same.

To permit this unsightly and awkward block to remain would much disfigure the approach to the new street, whereas by taking off about ten feet from the front of the public-house, and gradually slanting the line to the western end of the adjoining building, *as it now stands*, the original plan of the Board could be carried out. True, the expense would be greater now than in the first instance; but this should be no

obstacle, considering the importance of the undertaking itself, and the public interests involved. I enclose my card, and am, sir, yours faithfully,

ARGUS.

London: March 24, 1885.

### Igneous Building Stones.

SIR,—Your correspondent on the above subject does not, as it appears to me, advance the matter. All that he proposes may be seen any day in an hour's walk round the Royal Exchange. What is necessary if there is to be an extended use of these beautiful and indestructible materials is to apply them artistically. At present, I venture to think that this treatment is almost, if not quite, wanting. They are used, after being polished, for a few details of a building otherwise entirely faced with freestone. If the freestone remained as clean as the masons leave it, this practice would not be very objectionable from an art point of view, but as it is rapidly blackened by soot absorption, the contrast of the clean and bright-coloured granite with dirty stone creates an inharmonious effect that is disagreeable in the extreme.

The remedy is easy. Abandon half measures. Face the whole of the building with ashlar of the nearly white granite from Par or Gunnislake, in Cornwall, or Okehampton, in Devon, and then execute the details in the coloured varieties—red from Peterhead or Trowlesworthy, or (with black veining) from Luxillian, emphasising the effect with a little of the beautiful green porphyry (brighter than verde antico) from Lambay Island, near Dublin, and a little black basalt from Rowley, near Birmingham. Any style but pure Classical—now obsolete—can be adopted, as the strings, jambs, and cornices can be worked out with larger and smaller splays instead of elaborate mouldings. This done, a little mosaic work in spandrels, friezes, and panels, and a façade is complete, and not only complete, but of everlasting durability, and, being polished, always clean, for being constructed of a hard non-absorbent material, every shower would wash the surface down. An eye for colour would, of course, be very desirable, but the exterior of the Duomo at Monreale (see Gravina), the campanile at Florence, the churches of the district of Aquila (Schultz) in South Italy, and our own flint and stone churches in Norfolk and Suffolk, are suggestive of appropriate treatment in these hard materials.

I am strongly of opinion that if a London façade constructed of these beautiful and imperishable materials—chaste and pure as a Greek temple, or rich in colour as a Byzantine church—were but once realised, it would be acknowledged to be the right thing in the right place, and it would probably establish a new epoch in urban architecture. No one is a greater admirer than I am of carved and moulded details in freestone, only I venture to protest that they are very unsuitable for the smoky and destructive atmosphere of London, which at once defiles and soon destroys them. Interiors and the country are the proper and sufficient fields for their display. A comparative estimate from detail drawings shows that no extra cost need be incurred. On the one hand, the usual elaborate carving and moulding of freestone is done by manual labour; on the other, a clever little machine does the surfacing at the rate of a square foot in five minutes, and polishing is done by boys.

Your obedient servant,

CEPHAS.

### LEGAL.

#### Queen's Bench.

(Before Mr. JUSTICE STEPHENS.)

BULL v. SAUNDERS—GIDDINGS v. SAUNDERS.

PAYMENT FOR QUANTITIES AND PLANS.

These were two actions relating to the same work. In the first action Messrs. J. & A. E. Bull, quantity surveyors, claimed the sum of 141*l.* 7*s.* 6*d.* for professional work done for the defendant, a London solicitor, in connection with the proposed Royal Hotel, Margate, which scheme ultimately fell through. The plaintiffs alleged that they had received their instructions from Mr. William Giddings, architect, who, they said, had received his authority from the defendant. The amount claimed included an item of 1,410*l.*, being 1½ per cent. on a sum of 94,000*l.*, the estimate for the proposed outlay, prepared by Mr. Walter Lynde, builder. The defendant denied having authorised Mr. Giddings to instruct Messrs. Bull, and contended that they did the work at their own risk—that is to say, on the chance of a company being formed.

In the action of Giddings v. Saunders, the plaintiff claimed a sum of 4,700*l.*, being 5 per cent. on the estimate of 94,000*l.*, for services rendered in connection with the same scheme as an architect. The defence was similar to the other.

In the end the jury returned a verdict for the defendant, and Mr. Justice Stephens gave judgment in accordance thereto, with costs.



## ART SCHOOLS.

**Derby.**—In consequence of the resignation of Mr. A. A. Bradbury, the committee of this school have invited Mr. Simmonds, who is at present the director and head-master of the Glasgow School of Art, to again take the position of head-master, and that gentleman has acceded to this request, and will assume the charge of the school on May 1. We understand, says the *Derby Mercury*, that the school will be completely reorganised, and that a prospectus on the new lines will shortly be issued. Mr. Simmonds will also proceed to erect a series of studios on the Burton Road on a similar principle to those in Paris, for the purpose of supplying high-class decoration work and designs for manufacturers. As a rule, all the artists employed in these studios will be either such as have completed their training in a school of art, or on passing through such a probation, the intention being to show the practical application of the system of instruction administered by the Science and Art Department to the manufacturing wants of the country. Should this scheme develop in our midst to the extent that is expected, it will afford an outlet for local talent that will be much appreciated.

## CHURCH BUILDING AND RESTORATION.

**Holywell Parish Church.**—The ancient parish church of St. James, Holywell, which has recently undergone enlargement and complete restoration at the cost of nearly 3,000*l.*, was reopened on Tuesday, when the services were attended by an immense congregation. The work of restoration on this occasion was undertaken by the vicar, the Rev. R. O. Williams, M.A., and from the plan of Mr. Matthew Wyatt, architect, of London. It consists of the erection of an apse at the church, which forms a sacarium, a quasi-chancel having previously been formed by railing off a portion of the body of the church. The organ-loft, built in the tower, has been removed, and the massive masonry in that ancient part of the church, which previously was plastered, has been brought to view. The old "loose-box" piers have been removed. The sittings in the church, which are now free and unappropriated, are of oak and pitch-pine, stained, ornamented, and varnished. The flooring of wooden blocks and the aisle are laid with pretty pattern tiles. A handsome pulpit of carved walnut has been presented by Miss Jones, Tower Garden, Holywell, and a massive brass eagle lectern by Mr. Williams, of Chester, both of which were executed by Messrs. Jones & Willis, of London and Birmingham.

**Hebden Bridge.**—The memorial-stones of the new Wesleyan Chapel were laid on Saturday last. The proposed building is to be erected on the site of the old structure, which was built in 1825. Italian will be the style, and it will be built of native stone, with facings of Yorkshire stone; the fittings will be of pitch pine and walnut. It will cost 4,000*l.*, and towards that sum 3,364*l.* has already been subscribed and promised. Messrs. C. O. Ellison & Son, Liverpool, are the architects, and Messrs. W. Ives & Sons, Shipley, are the contractors for the whole of the work.

## GENERAL.

**The Second Annual Exhibition** of the Glasgow Society of Lady Artists was opened on Monday. The collection comprises ninety-five pictures, eleven pieces of sculpture, and four plaques.

**Signor Simonetti** has obtained the commission for the statue of the late Bishop Quinn, which is to be erected in Brisbane Cathedral.

**Sir R. Loyd Lindsay** has presented a reredos to the parish church of Hagbourne. It was designed by Mr. H. Woodyear, architect.

**The King of Italy** laid the foundation-stone of the monument to Victor Emmanuel on Sunday. It will consist of an equestrian statue, with an esplanade, approached by steps from the piazza at the foot of the Capitoline Hill. The site was occupied by the convent of Ara Cœli.

**A Society of Pastel Painters** has been formed in Paris, with Mr. Roger Ballu for president, and M. Georges Petit for vice-president. Among the members are MM. Baudry, Emile Levy, Boulanger, Jules Lefebvre, Guillaume Dubufe, Philippe Rousseau, and Cazin.

**Mr. J. Usher**, of Bedford, has completed plans for the new Baptist chapel which is to be erected in Sandy.

**A Large Munich Stained Glass Window** has been erected in St. George's Cathedral, Cape Town, in memory of the Right Rev. Henry Alexander Douglas, Bishop of Bombay, who for some years prior to his appointment to that See was Dean of Cape Town. The subject represented is *The Charge to Peter*, and the artists are Messrs. Mayer & Co.

**Two Works by Ary Scheffer**, *St. Augustine and His Mother*, and a *Portrait of Mrs. Holland*, have been presented to the National Gallery.

**The Last of the Course of Lectures** at Carpenters' Hall will be delivered on Wednesday next, April 1, by Professor T. Reger Smith, on "Famous Timber Roofs." The Right Hon. the Lord Mayor, Master of the Carpenters' Company, will take the chair.

**Mr. G. S. Aitken** delivered a lecture in Dundee last week on "Ecclesiastical Architecture," from the temples of Egypt to the church of St. Isaac, Petersburg.

**M. Jean Vernaz** has discovered a large aqueduct, which formerly was used for the water supply of Carthage. It has been so well preserved that Mr. Grant, the chief engineer, proposes to employ it in connection with the new waterworks of Tunis.

**A Church** is about to be erected in Seascale from designs by Mr. C. J. Ferguson, of Carlisle.

**An Exhibition of Gas and Water Apparatus and Appliances** is to be held in Carlisle from the 13th to the 18th April.

**The Restoration** of the Church of St. Andrew, Rillington, is about to be commenced under the direction of Mr. C. Hodgson Fowler, F.S.A., Durham.

**The Primate of Hungary** has given 20,000*l.* towards the completion of the cathedral at Grau, which was commenced in 1821.

**The Report of the Ecclesiastical Commission** for last year shows that architects' fees amounted to 2,096*l.* 6*s.* 10*d.*, and the surveyors' charges to 13,651*l.* 13*s.* 8*d.*

**The Franciscan Monastery** at Upton, E., designed by Messrs. Pugin & Pugin, has just been commenced. Mr. J. Gregar, of Stratford, is the contractor.

**An Industrial School** is to be erected at Liberton, near Edinburgh.

**A New Retort-house** is to be erected at the Wortley Gas Works, belonging to the Leeds Corporation.

**Mr. A. B. Plummer** has been appointed architect for the additions to the Newcastle City Lunatic Asylum at Caxlodge, on which about 20,000*l.* will be expended.

**The Building** which is about to be erected for the Industrial Exhibition in Dublin will cost 3,300*l.* It is to be completed within ten weeks. Mr. J. J. O'Callaghan is the architect, and Messrs. Beckett the contractors.

**Mr. W. Parslow** will read a paper on "Lunatic Asylums" at the meeting of the Liverpool Architectural Society on Wednesday next.

**A Cottage Hospital** is about to be built at Watford, and at a meeting, held on the 17th inst., a site was selected, and Mr. C. P. Ayres, of Watford, was appointed architect.

**The Corporation of Southampton** have approved of a recommendation to lend the Dock Company nearly a quarter of a million of money for the construction of deep water docks.

**The Newbury Building Land Company** have purchased the meadow at Speen overlooking Northcroft, and intend laying out the property for building sites.

**The West Cumberland Iron and Steel Company**, Workington, have just received an order for 10,000 tons of steel rails for the Indian Government. The order for the rails for the Suakim-Berber railway has been divided between Messrs. Charles Cammell & Co. and the Barrow Hematite Steel Company.

**A New Railway Goods Store** has been commenced at Bolton. The contractor is Mr. Riley, of Fleetwood.

**Among the Plant** required for the Suakim and Berber Railway, Messrs. Lucas & Aird have specified a number of Norton's "Abyssinian" tube wells, with pumps and driving apparatus. Messrs. Le Grand & Sutcliffe have received orders to prepare these for immediate despatch to Suakim.

**The Geological Survey of Algeria**, long suspended, has lately been resumed, and it is hoped that a new and revised edition of the map may be ready in 1887. One, on an exceptionally large scale, of the environs of Algiers, is in course of execution, based on the map prepared by the military engineer, of the scale of  $\frac{1}{200,000}$ .

**Messrs. C. Isler & Co.**, of 88 Southwark Street, S.E., have recently completed at Messrs. Thos. Murphy & Co.'s Brewery, Clonmel, Ireland, a 6-inch bored tube well, 62 feet deep, which yields a supply of over 10,000 gallons per hour, obtained from the rocks which underlie gravel and sand beds. Mr. E. R. Southby, after analysis, reports the water "free from all forms of organic pollution. In fact, it takes rank amongst the very purest waters." Also at Messrs. Brown & Terry's Brewery, Burnham Beeches, Berks, a tube well, the same size, but 130 feet from the surface; a yield of 3,000 gallons per hour is obtained. The discrepancy is due to the nature of the strata, for in this instance the supply is drawn from the chalk beds. A 300 feet 7½-inch tube well on Bankside, Southwark, for the London and Belfast Aërated Water Company, has just been commenced.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MARCH 28, 1885.

## NOTICE.

*The next Number of THE ARCHITECT will be published on Thursday, April 2, the usual day of publication being Good Friday. All advertisements intended for insertion in that Number must reach the Office not later than 5 P.M., on Wednesday, April 1.*

## LOADING TIMBER.

THE British Vice-Consul at Memel calls attention to a grievance under which timber merchants suffer at that port. With the present method of loading timber steamers are scarcely able to avoid finding that they are some sleepers short when they come to deliver their cargo. For there is an old custom that all timber should be delivered to the mate of the vessel at the timber yard, bills of lading being signed based upon his receipt. The more costly goods are transported in lighters, but for beams and sleepers this would be too expensive. They are therefore bound together in rafts and floated down the river to the ship, a distance of from one to two miles. Beams generally arrive in safety, but sleepers cannot be firmly secured, and whenever there is some wind or a strong current, the rafts get loose, and some sleepers drift away, and cannot be recovered without danger to the remainder. The clause generally contained in the charter-party, "to be delivered on board," is vitiated by the words "as customary" being added, and so masters are compelled to receive delivery at the timber yard. Merchants here insist upon this being the custom of the port, and masters have always submitted to it, partly, no doubt, because they find the arrangement not wholly without advantage, since by that means they can obtain the exact lengths and qualities which they at the moment require. If, on the other hand, merchants want to send timber to the vessel, the quantity sent would be either too great to be properly secured alongside, or too small, in which latter case the ship would have to lose time in waiting for additional cargo. To guard against being made responsible for short delivery, masters note protest, but the merchants refuse to accept a copy of a document so marked, and they object also to any remark referring to it being made on the bills of lading, insisting upon having them signed in accordance with the mate's receipt. They can force masters to give clean bills of lading by withholding their declaration of goods shipped, such declaration being required by the Custom House before they will grant clearing. Complaints have been made by steamship owners with reference to the above matter, but all the consul's efforts to procure a change have been fruitless, and he says he cannot recommend an appeal to a court of law, since he considers that the issue would be doubtful, while the expenses would be great and the object to be attained trifling.

## CONTRACTS OPEN.

**ABERDARE.**—For Supply of Cast-iron Socket and Spigot Main Pipes. Mr. Evan Jones, Gas Offices, Aberdare.

**ABERDEEN.**—April 4.—For Building Part of Steading of Offices at Wardhead. Mr. James Strachan, Milton, Lumphanan.

**AIRDRIE STATION.**—April 6.—For Iron Roof, &c. Mr. J. Strain, C.E., 154 West George Street, Glasgow.

**ANDOVER.**—For Reseating, Renovating and Painting Chapel. Mr. H. Tilling, London Street, Andover.

**ARMAGH.**—April 11.—For Fitting Laundry with Steam Engine, Boilers, Drying Closet, Hydro-extractor, Wringing Machine, &c. Mr. J. Boyd, Architect, 9 Donegall Square West, Belfast.

**ATHERSTONE.**—April 11.—For Construction of Waterworks (Engine and Boiler-houses, Chimney Shaft, &c., Reservoir) and Supply of Iron Pipes, Engines, Boilers, &c. Mr. Baldwin Latham, C.E., 7 Westminster Chambers, S.W.

**AUDLEM, CHESHIRE.**—For Works at St. James's Church. Messrs. Lynam & Rickman, Architects, Stoke-upon-Trent.

**BASINGSTOKE.**—March 28.—For Building Shop, Dwelling-house, &c. Mr. James Gibson, Architect, Basingstoke.

**BELFAST.**—March 28.—For Building School-house. Messrs. J. Fraser, Architects, 117 Victoria Street, Belfast.

**BELFAST.**—March 30.—For Construction of Graving Dock, Entrance Basin, and other Works, on East Side of Victoria Channel. Mr. F. R. Salmond, Harbour Engineer, Belfast.

**BEXHILL.**—March 31.—For Enlargement and part Rebuilding Church of St. Mark. Rev. J. H. Simpson, Rector, St. Mark's, Bexhill.

**BINGLEY.**—For Building House. Mr. G. Foggitt, Architect, Yeadon.

**BINGLEY.**—For Cast-iron Tank, Gasholder, and Gas Mains, for the Improvement Commissioners, Bingley.

**BLYTH.**—March 31.—For Erection of Two Houses and Offices. Mr. J. Hogg, Architect, 4 St. Mary's Place, Newcastle-on-Tyne.

**BRADFORD.**—April 1.—For Building Twenty-eight Houses and Soap Warehouse. Mr. M. Brayshaw, Architect, Bowling Old Lane, Bradford.

**BRADFORD.**—April 2.—For Building Two Houses. Mr. W. Rycroft, Architect, 12 Bank Buildings, Manchester.

**CARDIFF.**—For Building Hotel and Restaurant and Seven Shops and Warehouses, West Bute Street, for the West Bute Street Building Co. Messrs. Blessley & Aspinall, Architects, Cardiff.

**CARDIFF.**—March 31.—For Rebuilding Inn at Cadoxton. Mr. J. P. Jones, Architect, 27 Park Street, Cardiff.

**CARDIFF.**—March 31.—For Building Catholic Church. Messrs. Pugin & Pugin, Architects, 19 Surrey Street, Strand, W.C.

**CAERWYS.**—March 30.—For Building House and Out-offices. Mr. T. Roberts, Mostyn Square, Caerwys.

**DARLINGTON.**—For Building House. Mr. Bell, Architect, Skinnergate, Darlington.

**DARLINGTON.**—March 31.—For Building Engine and Boiler-houses, Well, Engine Foundations, Boiler Seatings, Flues, Shaft, Air-vessel Chambers, Suction Culvert, &c., at Broken Scar. Mr. J. Mansergh, C.E., 3 Westminster Chambers, Victoria Street, S.W.

**DROMORE.**—April 1.—For Building Town Hall and Market Enclosure. Mr. J. B. McConnell, Town Clerk, Dromore, co. Down.

**DURHAM.**—April 1.—For Building Police Station. Mr. Crozier, County Architect, Shire Hall, Durham.

**EAST DEREHAM.**—April 10.—For Works to Nave and Aisle Roofs, Warming Parish Church, &c. Mr. E. P. Willins, Architect, Bank Plain, Norwich.

**EAST GRINSTEAD.**—March 31.—For Erection of Hydrants. Mr. A. H. Hastie, Clerk to the Local Board, East Grinstead.

**ELY.**—April 4.—For Supply of Cast-iron Pipes, Sluice Cocks, Engines, Pumps, Boilers, &c., and Building Engine and Boiler House, Coal Store, Chimney Shaft, Cottage, &c. Messrs. Easton & Co., C.E., 11 Delahay Street, Westminster.

**FENTON.**—March 30.—For Construction of Pipe Sewers. Mr. S. A. Goodall, Surveyor, Public Offices, Fenton.

**FIFE-KEITH.**—April 8.—For Erection of Buildings for the Institute Company. Mr. F. D. Robertson, Architect, Fife-Keith.

**FOWEY.**—March 31.—For Building Hotel and Stables. Mr. A. S. Clunes, Architect, Fowey.

**GALWAY.**—April 15.—For Building Constabulary Barrack. Mr. W. B. Soady, Office of Public Works, Dublin.

**GALWAY.**—April 15.—For Building Post Office. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**GLENESK.**—March 31.—For Taking Down and Re-erecting Bridge at Mildren. Mr. John Sim, C.E., 194 High Street, Montrose.

**GOLCAR.**—April 2.—For Warming Apparatus, Restoring and Restalling St. John's Church. Messrs. John Kirk & Sons, Architects, Huddersfield.

**HALIFAX.**—April 4.—For Erection of House and Shop at Lee Mount, Ovenden. Messrs. Horsfall & Williams, Architects, Post Office Buildings, Halifax.

**HALIFAX.**—April 9.—For Erection of Shops and Houses at junction of North Bridge and Cross Hills. Messrs. G. Buckley & Sons, Architects, Halifax.

**HASTINGS.**—April 8.—For Two Compound Beam Engines with Surface Condensers, Four Bucket and Plunger Pumps, Set of Three-throw Pumps and Steel Lancashire Boilers. Messrs. Easton & Co., 11 Delahay Street, Westminster.

**HEXHAM.**—March 28.—For Alterations and Additions to St. John's College, Maidencross.



Messrs. Oliver & Leeson, Architects, Bank Chambers, Newcastle-on-Tyne.

HOPTON.—March 31.—For Building Three Houses and Shops. Mr. T. Appleyard, Hopton, Miffeld.

HULL.—April 16.—For Water Main Piping (2,000 tons). Mr. D. Maxwell, C.E., Town Hall, Hull.

HUMBERSTONE.—March 31.—For Building Boiler and Coal-houses, &c., at Lunatic Asylum. Mr. J. Gordon, C.E., Borough Surveyor, Leicestershire.

ILKESTON.—April 7.—For Brickwork of Retort House and Erection of Retort Beds, Fitting Shop, Chimney Shaft, &c., at Gasworks. Mr. Wright Lissett, Clerk, Town Hall, Ilkeston.

KEIGHLEY.—April 8.—For Building Warehouse, Cross Road Mills. Mr. J. Judson, Architect, Bogthorn, Keighley.

KINGSTON-ON-THAMES.—March 28.—For Repairs and Alterations to Cemetery Chapels, &c. Mr. J. Durham, Clarence Street, Kingston-on-Thames.

LEEDS.—March 30.—For Grove House and Additions to Foundry in Manor Road. Messrs. Wilson & Bailey, Architects, 35 Park Square, Leeds.

LINCOLN.—March 30.—For Erection of Warehouse in St. Benedict's Square, Lincoln. Messrs. Bellamy & Hardy, Architects.

LONG EATON.—March 30.—For Building Factory, with Engine and Boiler-house, Out Offices, and Boundary Walls. Mr. John Sheldon, Architect, Market Place, Long Eaton.

LOW WATERHOUSES.—For Girder Bridge. Mr. J. G. Wilson, 60 Sadler Street, Durham.

MIDDLESBROUGH.—March 31.—For Construction of New Buildings for Pumping Machinery according to Plans by Mr. J. Mansergh, C.E. Mr. D. D. Wilson, Water Board Office.

POPLAR.—April 11.—For Building Dwelling-houses for Pier-master and Crew. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

RADCLIFFE.—For Building Villas. Messrs. Calvert & Wright, Architects, 18 Low Pavement, Nottingham.

RADNOR.—April 6.—For Erection of Timber Bridge at Llanbister, according to plans by County Surveyor, Rhayader. Mr. W. Stephens, Shirehall, Presteign.

REIGATE.—April 7.—For Building Infectious Hospital and Cottage. Mr. E. Larmer, Architect, High Street, Reigate.

RICHMOND.—April 8.—For Building Post Office. H.M. Office of Works, 12 Whitehall Place, S.W.

ROATH.—March 31.—For Supply and Erection of Stalls and Pens at Cattle Market. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff.

ROCHDALE.—April 1.—For Supply of Six Cast-iron Purifiers, 30 feet square, &c. Mr. T. B. Ball, Manager, Gasworks, Rochdale.

RUGBY.—March 31.—For Building Wesleyan Day Schools. Mr. J. F. Symes, Town Hall, Rugby.

RUGELEY.—April 8.—For Alterations and Additions to Grammar School. Messrs. Radcliffe and Holdsworth, Architects, Birkenhead. Mr. R. Landor, Clerk to Governors, Rugeley.

SOUTHPORT.—April 16.—For Erection of School for 489 Children in Swire and Bury Roads, Birkdale. Mr. C. A. Atkinson, Architect, 35A Castle Street, Liverpool. Mr. H. S. Threlfall, Clerk to the School Board.

SOUTH SHIELDS.—For Erection of a Church in Parish of St. Jude. Mr. J. H. Morton, Architect, South Shields.

WELLINGTON.—April 11.—For Laying Cast-iron Pipes, Erection of Pumping Station, Water Tower, with Adit and Well. Mr. E. Pritchard, C.E., 2 Storey's Gate, Westminster.

WIGAN.—April 6.—For Erection of a new Church at Lower Ince. Messrs. Paley & Austin, Architects, Lancaster.

UPPINGTON.—March 30.—For Restoring Church. Mr. S. P. Pritchett, Architect, High Row, Darlington.

YORK.—April 4.—For Erection of a Flour Warehouse and Offices in Hangate. Mr. W. G. Penty, Architect, Clifford Chambers.

## TENDERS.

### ABERGAVENNY.

For Repairs to Carriage Drive, Coln Brook Park, Abergavenny. Mr. J. GETHIN JAMES, Surveyor.

|                   |     |    |   |
|-------------------|-----|----|---|
| Dew               | £43 | 17 | 4 |
| Fisher            | 43  | 13 | 9 |
| Llewellyn         | 41  | 0  | 0 |
| James             | 40  | 12 | 6 |
| FOSTER (accepted) | 32  | 12 | 2 |
| Young             | 31  | 6  | 6 |

All of Abergavenny.

### ASHTON-UNDER-LYNE.

For Erection of Trafalgar Day Schools. Mr. J. H. BURTON, Architect, Ashton-under-Lyne.

GIBSON, Dukinfield (accepted).  
(Seventeen tenders were received.)

### BELFAST.

For Remodelling and Enlarging Licensed Premises at Queen's Bridge and Bridge End, Ballymacarrett, for Mr. Edward Fuller. Mr. E. J. BYRNE, Architect, 4 Waring Street, Belfast.

|                  |      |   |   |
|------------------|------|---|---|
| Boyd             | £960 | 0 | 0 |
| Murdoch          | 870  | 0 | 0 |
| McErlean         | 850  | 0 | 0 |
| Kerr             | 825  | 0 | 0 |
| H. & J. Martin   | 796  | 0 | 0 |
| Rooney & Mooney  | 703  | 0 | 0 |
| AGNEW (accepted) | 700  | 0 | 0 |

### BRADFORD.

For Additions to Premises in Kirkgate, Bradford. Mr. JAMES LEDINGHAM, Architect.

#### Accepted Tenders.

Illingsworth Bros., mason, bricklayer, joiner, and ironfounder.

Hodgson & Son, plumber.

Holdsworth, plasterer.

Harland & Sons, painter.

# R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,  
INVENTOR and PATENTEE of the  
SAFETY WINDOW WITH REVERSIBLE SASHES

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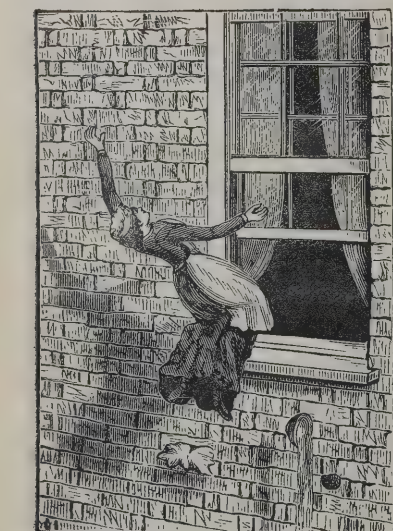
Which has gained at the INTERNATIONAL HEALTH and  
SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
and 16 Diplomas of Merit.

The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

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Barnstaple  
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Bournemouth and 10 miles round  
Brighton and 8 miles round  
Bristol and 20 miles round, and  
Gloucestershire, Somerset, Dorset,  
Wiltshire, Mon., Glamorganshire  
Dublin and 20 miles round  
Dundee and 30 miles round  
Edinburgh  
Exeter and 20 miles round  
Glasgow and 30 miles round  
Gloucester and Cheltenham

Hancock, Pilton Street.  
W. J. Watson, Royal Avenue, Belfast.  
H. W. Jenkins & Son, Builders.  
Cheesman & Co., Kensington Street.  
Brock & Bruce, Albert Road, St. Phillip's.  
J. & W. Beckett, 28 South King Street.  
Stewart Robertson, 34 Bank Street.  
W. R. Commings, 45 Longbrook Street.  
Baird, Thompson & Co., 24 Bath Street.  
The Sanitary and Economic Association.

Hastings  
Hereford and 5 miles round  
Ilfracombe  
Leeds and 5 miles round  
Liverpool  
Ludlow and Leominster  
Newton Abbott and 10 miles round  
Nottingham and 15 miles round  
Reading and 5 miles round  
Southampton and 7 miles round  
Sunderland and 10 miles round  
Torquay and 5 miles round

Taylor Bros., Builders.  
C. Lawrence, 41 Portland Street.  
W. Jones, 4 Osborne Road.  
John Wm. Lewes, 65 Albion Street.  
Evan Griffiths & George Finning, Sefton Works,  
Miles Street.  
J. Grosvenor, Ludlow.  
Parker Bros., Courtney Street.  
Henry Vickers, Welford Road.  
Driver & Co., St. Mary Saw Mills, Southampton.  
C. & W. Watson, Union Street.





**BRIDLINGTON.**  
For Cementing House Front, Bridlington. Mr. J. EARNSHAW, Architect, Bridlington Quay.  
Leeson . . . . . £33 10 0  
SIMON (accepted) . . . . . 32 10 6

**BROCKLEY.**  
For Building Station at Brockley Rise, for the London, Brighton, and South Coast Railway.  
DEACON & CO., Lower Norwood (accepted).

**BROTTON.**  
For Improvement of Saltburn Lane, Broton, for the Skelton and Broton Local Board. Mr. J. W. WITT, Surveyor, Skelton-in-Cleveland.  
*Walling.*  
Ridsdale, Skelton . . . . . £383 0 0  
Dickenson, Saltburn-by-the-Sea. 225 0 0  
GLADSTONE, Broton (accepted) 186 13 6  
*Wrought-iron Fencing.*  
FLETCHER, Broton, 5s. 3d. per yard (accepted); Jackson, Broton, 7s. 6d. per yard.

**DRIFFIELD.**  
For Building House and Shop, West Gate, Driffeld. Mr. J. EARNSHAW, Architect, Wellington Road, Bridlington Quay.  
Dickinson . . . . . £470 0 0  
Dry . . . . . 440 0 0  
Gage . . . . . 405 0 0  
Harrison . . . . . 400 0 0  
S. Leeson . . . . . 384 4 6  
W. Leeson . . . . . 366 0 0  
Rennard . . . . . 355 0 0  
GRAY (accepted) . . . . . 325 0 0  
For Taking Down and Rebuilding House, Shop, and Premises, Middle Street, Driffeld. Mr. J. EARNSHAW, Architect, Bridlington Quay.  
Dunn . . . . . £279 10 0  
W. Leeson . . . . . 277 0 0  
Berry . . . . . 268 0 0  
Dickinson . . . . . 264 0 0  
S. Leeson . . . . . 260 0 0  
Gage . . . . . 257 0 0  
Dry . . . . . 245 0 0  
GRAY (accepted) . . . . . 215 0 0

**BRENTWOOD.**  
For Erection of Twelve Bunks in the Stone Yard at the Workhouse, Isleworth, Brentford Union.  
Crabb, Acton . . . . . £73 15 0  
Spicer, Brentford . . . . . 67 0 0  
Bell, Southall . . . . . 57 0 0  
Careless & Co., Richmond . . . . . 57 0 0  
Maton, Kew . . . . . 57 0 0  
Bloomer, Brentford End . . . . . 44 19 0

**ESTON.**  
For Alteration to Eston Junction School, for the Eston School Board. Mr. W. H. BLESSLEY, Architect, Middlesbro'.  
BULMER (accepted).  
For Additions to Board School, South Eston. Mr. W. H. BLESSLEY, Architect, Middlesbro'.  
Bastiman . . . . . £445 0 0  
Paley . . . . . 439 5 0  
Garbut . . . . . 437 10 0  
Johnson . . . . . 420 0 0  
Hudson Bros. . . . . 412 0 0  
Allison Bros. . . . . 409 15 0  
Thwaites . . . . . 408 0 0  
Lord . . . . . 400 0 0  
Atkinson . . . . . 396 0 0  
Severs . . . . . 349 0 0  
Leonard . . . . . 345 13 8  
BULMER (accepted) . . . . . 345 10 0

**GLASGOW.**  
For Earthwork, &c., of Hill Farm Siding, Greenock and Wemyss Bay Railway. Mr. THOMAS D. WEIR, Engineer, Glasgow.  
Boyle, Glasgow . . . . . £366 5 3  
Russell, Bearsden . . . . . 294 8 8  
HARVIE, Lesmahagow (accepted) 282 18 6  
For Covering the Cattle Market, Glasgow.  
*Accepted Tenders.*  
M'Farlane & Son, wright, glazier, and painter work £10,750 0 0  
Kesson & Campbell, iron work 8,965 11 0  
Eadie, excavator, mason, and pavior work 2,742 3 10  
Brown & Young, plumber work 1,779 0 0  
Stevenson & Son, slater work 1,623 3 1  
Henderson, gasfitter work 516 14 3

**EDINBURGH.**  
For Works at the New Entrance to Queen's Park, at Heriot Mount, Edinburgh.  
M'INTOSH (accepted) . . . . . £242 0 0

**GORLESTON.**  
For Building Schoolroom, High Street, Gorleston. Messrs. COCKRILL & JOHNSON, Architects.  
Barnard, Gorleston . . . . . £180 0 0  
Leggett, Gorleston . . . . . 147 0 0  
Grimble & Watts, Yarmouth . . . . . 130 0 0  
FULLER, Gorleston (accepted) . . . . . 120 10 0  
For Alterations to Barking Fishery. Mr. H. DUDLEY ARNOTT, Architect, Gorleston.  
Fuller . . . . . £488 0 0  
Cork & Beech . . . . . 462 0 0  
Bray . . . . . 396 0 0  
Leggett . . . . . 385 0 0  
WATT (accepted) . . . . . 365 0 0

**HOLBECK.**  
For Building Eight Houses, Holbeck. Mr. J. EVERS, Architect, Leeds.  
*Accepted Tenders.*  
Holdsworth & Co., mason . . . . . £575 0 0  
Harding, joiner . . . . . 236 0 0  
Oldham, plumber . . . . . 92 0 0  
Marsden, plasterer . . . . . 76 0 0  
Lawson, slater . . . . . 48 0 0  
Crosland, painter . . . . . 27 0 0

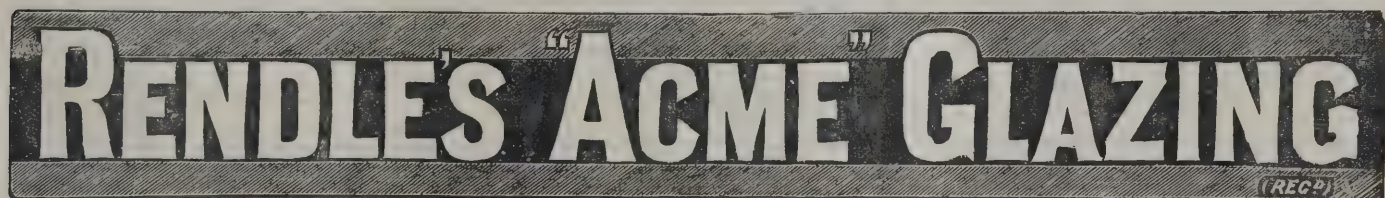
**LONDON.**  
For Building a Chapel at St. John's Hill, Wandsworth, for the Committee. Messrs. T. CHATFIELD CLARKE & SON, Architects.  
Mr. H. H. Leonard, Surveyor.  
Lee . . . . . £1,885 0 0  
Adamson & Sons . . . . . 1,650 0 0  
Smith . . . . . 1,528 0 0  
Avis & Sons . . . . . 1,510 0 0  
Nightingale . . . . . 1,479 0 0  
Robinson . . . . . 1,450 0 0  
Turtle & Appleton . . . . . 1,440 0 0  
Johnson . . . . . 1,417 0 0  
Scott . . . . . 1,400 0 0  
SEARCHFIELD & SON (accepted) 1,384 0 0  
For Heating Free Public Library, Northwich. BACON & CO., London (accepted).

TO THE ARCHITECTS OF THE UNITED KINGDOM.

**MR. FREDERICK HENRY SMITH, of No. 52 Queen Victoria Street, E.C.,**  
INVENTOR, PATENTEE, AND SOLE PROPRIETOR OF THE PATENT AUTOMATIC ASPIRATOR SYSTEM  
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For further extension to Lavatories, &c, at the Licensed Victuallers' Schools. Mr. W. T. FARTHING, Architect.

SHURMUR (accepted) . . . £451 0 0

For Warehouses, Millwall, 180 feet by 60 feet, and 160 feet by 40 feet, for Mr. J. T. Morton, under the Superintendence of Mr. W. EVE, 10 Union Court, Old Broad Street, E.C.

HARRIS & WARDROP, accepted on schedule of prices.

For Alterations to the Prince of Wales Public-house, North Street, Pentonville, for the City of London Brewery Company. Mr. W. J. JEWELL, Architect.

Jackson & Todd . . . £348 0 0

Spencer & Co. . . . 335 0 0

SHURMUR (accepted) . . . 324 0 0

For Alterations to the Caledonian Public-house, Stoke Newington Road. Mr. J. STILES, Architect.

Oldis Bros. . . . £3,350 0 0

Goodall . . . . 2,120 0 0

Shurmur . . . . 1,890 0 0

Mower . . . . 1,795 0 0

Steel Bros. . . . 1,478 0 0

For Alterations to the Boar's Head Public-house, Fleet Street, E.C. Mr. R. A. LEW-COCK, Architect.

Colls & Sons . . . £1,400 0 0

Kebble & Nelson . . . 1,399 0 0

Marr . . . . 1,176 0 0

Shurmur . . . . 1,143 0 0

Godden . . . . 950 0 0

Jackson & Todd . . . 919 0 0

For Erection of Steam Boiler and Heater at St. Luke's Workhouse, Shepherdess Walk, for the Guardians of the Holborn Union. Messrs. H. SAXON SNELL & SON, Architects, 22 Southampton Buildings.

Marshall & Co . . . £415 0 0

Fraser & Co. . . . 385 10 0

Fraser & Fraser . . . 356 12 0

May Bros. . . . 323 10 0

COLLIS (accepted) . . . 262 18 0

## LONDON—continued.

For Construction of 400 feet of Brick Sewers and 90 feet of 12-inch Pipe Sewer, with Works in Connection, St. Giles's District. Mr. G. WALLACE, Surveyor.

Wilkes & Co. . . . £1,466 4 4

Taylor . . . . 1,135 0 0

Walker . . . . 1,115 0 0

Pizzey . . . . 1,098 0 0

Harris . . . . 1,087 0 0

Mowlem & Co. . . . 1,075 0 0

Nowell & Robson . . . 1,050 0 0

Mears . . . . 1,040 0 0

KILLINGBACK (accepted) . . . 970 0 0

For Erection of House and Offices at North Finchley, for Mr. Boverton-Redwood. Mr. E. J. MAY, Architect. Quantities by Mr. R. C. GLEED.

Green . . . . £1,989 0 0

Maides & Harper . . . 1,987 0 0

Parmenter . . . . 1,951 0 0

Fairhead & Son . . . 1,936 0 0

Grover & Son . . . . 1,878 0 0

L. & W. J. Patman . . . 1,875 0 0

Scrivener & Co. . . . 1,865 0 0

Lawrence & Sons . . . 1,850 0 0

Smith, Camberwell . . . 1,839 0 0

For Drainage-work at the Infirmary and Work-house, Fulham. Mr. G. SAUNDERS, F.R.I.B.A., Architect.

Gibbs & Flew . . . £725 0 0

Faillless . . . . 675 10 0

Buckland . . . . 660 0 0

Harwood . . . . 650 0 0

Thompson . . . . 642 0 0

Mears . . . . 631 0 0

Adams . . . . 549 0 0

S. & G. Saunders . . . 501 4 10

Leslie & Knight . . . 497 0 0

Bendon . . . . 461 10 0

Somes & Wimpey . . . 445 0 0

Nicholson . . . . 435 0 0

OWEN (accepted) . . . 329 0 0

Architect's estimate . . 490 0 0

For Heating St. Stephen's Church, Bournemouth. BACON & CO., London (accepted).

## LONDON—continued.

For Enlargement of Board School, Waterloo Road. Mr. T. J. BAILEY, Architect.

Palmer & Son . . . £2,855 0 0

Staines & Son . . . 2,786 0 0

Larter . . . . 2,770 0 0

Hart . . . . 2,714 0 0

Wall Bros. . . . 2,688 0 0

Pritchard . . . . 2,677 0 0

Downs . . . . 2,672 0 0

Cox . . . . 2,643 0 0

Reading . . . . 2,640 0 0

Goodman . . . . 2,633 0 0

Marsland . . . . 2,613 0 0

Williams & Son . . . 2,595 0 0

Turtle & Appleton . . . 2,585 0 0

Perry & Co. . . . 2,570 0 0

Grover . . . . 2,568 0 0

Howell & Son . . . 2,534 0 0

Lathey Bros. . . . 2,518 0 0

F. & F. J. Wood . . . 2,493 0 0

Stimpson & Co. . . . 2,490 0 0

Kearley . . . . 2,489 0 0

Oliver . . . . 2,460 0 0

Atherton & Latta . . . 2,450 0 0

Johnson . . . . 2,442 0 0

W. & F. Croaker . . . 2,436 0 0

Smith & Son . . . . 2,427 0 0

Holloway . . . . 2,425 0 0

Hunt . . . . 2,375 0 0

For Rebuilding on the Sites of Nos. 465 and 467 Oxford Street, W., for Messrs. Hammond & Co. Messrs. T. CHATFIELD CLARKE & SON, Architects. Mr. H. H. Leonard, Surveyor.

Ashby Bros. . . . £8,718 0 0

Clarke & Bracey . . . 8,549 0 0

Holland & Hannen . . . 8,388 0 0

Bywaters . . . . 8,334 0 0

Conder . . . . 8,255 0 0

Brown, Son & Blomfield . . 8,250 0 0

Colls & Sons . . . . 8,200 0 0

Patrick & Son . . . . 8,127 0 0

Lawrance & Sons . . . 8,033 0 0

Nightingale . . . . 7,883 0 0

Chappell . . . . 7,764 0 0

Hall, Beddall & Co. . . 7,684 0 0

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WRIGHT'S FIREPROOF FIXING BLOCKS.  
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For Skirtings, Dados, Matchboarding, Linings, &c., superseding Wood Grounds and Backings, without extra cost. Special Sections are now made for fixing Floor-boards to Concrete or Fireproof Floors, omitting Joists, saving Depths, and preventing Spaces or the accumulation of Dirt and Dust. Fireproof Plugs for Joists, &c., &c.—GEORGE A. WRIGHT, 3 Westminster Chambers, Victoria Street, S.W.

## HENRY KING,

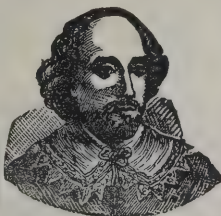
(Late GREEN & KING.)

House Painter, Upholsterer, and General Contractor,

4 Lower Seymour St., Portman Sq., W.

(Late of 100 NEW BOND STREET.)

DESIGNS PREPARED AND ESTIMATES GIVEN.



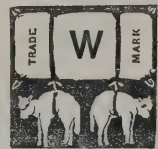
## QUANTITIES, ETC.

Correctly Written and  
Lithographed by return of post  
certain.

J. L. ALLDAY.

Shakespeare Steam Printing  
Works,  
COLMORE ROW,  
BIRMINGHAM.

## WM. WOOLLAMS &amp; CO.,



ORIGINAL MAKERS OF  
ARTISTIC WALL  
PAPERS.

FREE FROM ARSENIC.

PATENT EMBOSSED  
FLOCKS.

Dado Decorations, Embossed Leathers, Raised Flocks.

No Travellers Employed.

SOLE ADDRESS—110 HIGH STREET, near  
MANCHESTER SQUARE, LONDON, W.  
Fourteen Medals, including Gold Medal, International Health  
Exhibition, 1884.

## SURPLUS STOCK.

A Large Quantity of

PORTLAND SAWN SLABS,

Varying from 2" to 8" in thickness,  
TO SELL CHEAP. Must be Cleared immediately.

STEWARDS & CO, Limited,

GROSVENOR ROAD, PIMLICO, S.W.

R. N. CRABTREE, Manager.

## "SANITAS"

THE HOUSEHOLD DISINFECTANT.

Sanitary Institute Medal, Exhibition, 1882.  
Silver Prize Medal, National Health Society, 1883.  
Award, International Medical and Sanitary  
Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture  
Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH  
BODIES.

The Sanitas Co., Limited, Bethnal Green E.

GRUNDY'S PATENT  
WARM-AIR  
VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

## TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"Sir,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

Yours, &c.

"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,  
July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City

Road, London.  
Works—TYLDESLEY, near MANCHESTER.



LONDON—continued.

|   |         |   |   |
|---|---------|---|---|
| For Building Board School, Goodrich Road, Lordship Lane, Dulwich. Mr. THOS. J. BAILEY, Architect. Mr. T. Thornton Green, Quantity Surveyor. |         |   |   |
| Hunt . . . . .  | £19,812 | 0 | 0 |
| Tongue . . . . .  | 19,600  | 0 | 0 |
| Hart . . . . .  | 18,805  | 0 | 0 |
| Patman & Fotheringham . . . . .   | 18,778  | 0 | 0 |
| Wall Bros. . . . .  | 18,700  | 0 | 0 |
| Grover . . . . .  | 18,641  | 0 | 0 |
| Shepherd . . . . .  | 18,624  | 0 | 0 |
| Downs . . . . .   | 18,545  | 0 | 0 |
| Lathey Bros. . . . .  | 18,478  | 0 | 0 |
| F. & F. J. Wood . . . . .   | 18,175  | 0 | 0 |
| Oldrey . . . . .  | 18,000  | 0 | 0 |
| Boyce . . . . .   | 18,000  | 0 | 0 |
| W. & F. Croaker . . . . .   | 17,990  | 0 | 0 |
| Stimpson & Co. . . . .  | 17,983  | 0 | 0 |
| Jerrard . . . . .   | 17,788  | 0 | 0 |
| Wall . . . . .  | 17,757  | 0 | 0 |
| Holloway Bros. . . . .  | 17,757  | 0 | 0 |
| Cox . . . . .   | 17,734  | 0 | 0 |
| Holloway . . . . .  | 17,690  | 0 | 0 |
| Johnson . . . . .   | 17,539  | 0 | 0 |
| Kirk & Randall . . . . .  | 17,332  | 0 | 0 |
| Howell & Son . . . . .  | 17,107  | 0 | 0 |

LONDONDERRY.

|   |         |    |    |
|---|---------|----|----|
| For Construction of the Creggan Extension Waterworks, Londonderry. Messrs. STEWART & ROBINSON, C.E. |         |    |    |
| M'Clay, Strabane . . . . .  | £19,667 | 13 | 6  |
| Ross & Son, Belfast . . . . .   | 16,415  | 6  | 1  |
| Doherty, Dublin . . . . .   | 15,930  | 0  | 0  |
| Campbell, Castlereagh . . . . .   | 15,207  | 1  | 7  |
| Gault, Ballymena . . . . .  | 14,402  | 6  | 10 |
| Scoyney & M'Laren, Belfast . . . . .  | 13,971  | 6  | 6  |
| M'Crea & M'Farland, London . . . . .  | 12,999  | 0  | 0  |
| COLHOUN BROS., Londonderry (accepted) . . . . .   | 11,942  | 9  | 5  |

MORVIL.

|   |      |   |   |
|---|------|---|---|
| For Restoration of Parish Church, Morvil, Pembrokehire. Mr. E. H. LINGEN BARKER, Architect. |      |   |   |
| GRIFFITHS & THOMAS, Kilgerran (accepted) . . . . .  | £455 | 0 | 0 |

MENAI BRIDGE.

|   |      |   |   |
|---|------|---|---|
| For Alterations and Enlargement of Residence known as Brynteg, Menai Bridge, North Wales, for Dr. Roberts, of Manchester. Mr. RICHD. DAVIES, Architect, Bangor. |      |   |   |
| William Thomas, Bangor . . . . .  | £970 | 0 | 0 |
| Evan Williams, Bangor . . . . .   | 869  | 0 | 0 |
| David Williams, Carnarvon . . . . .   | 810  | 0 | 0 |
| Parry, Menai Bridge . . . . .   | 790  | 0 | 0 |
| Lloyd, Beaumaris . . . . .  | 640  | 0 | 0 |
| OWEN THOMAS, Amlwch (accepted) . . . . .  | 573  | 0 | 0 |

NEWPORT.

|   |        |   |   |
|---|--------|---|---|
| For Erection of Board Schools in Barlow Village, Newport, Isle of Wight. Mr. F. MEW, Architect. |        |   |   |
| Hayden, Sandown . . . . .   | £2,995 | 0 | 0 |
| Jenkins, Newport . . . . .  | 2,850  | 0 | 0 |
| Barton, Ryde . . . . .  | 2,819  | 0 | 0 |
| Hayles, Shanklin . . . . .  | 2,632  | 0 | 0 |
| Meador, jun., West Cowes . . . . .  | 2,625  | 0 | 0 |
| BALL, West Cowes (accepted) . . . . .   | 2,394  | 0 | 0 |

|   |        |    |   |
|---|--------|----|---|
| For Building School and Class rooms at Barnard Town School, Church Road, Newport, Mon. Mr. H. A. GOODMAN, Architect, Newport, Mon. Quantities by the Architect. |        |    |   |
| Jenkins, Newport, Mon. . . . .  | £1,600 | 0  | 0 |
| Jones & Co., Gloucester . . . . .   | 1,594  | 0  | 0 |
| Swanton, Newport, Mon. . . . .  | 1,552  | 0  | 0 |
| Martin, Newport, Mon. . . . .   | 1,419  | 0  | 0 |
| Wilkins, Newport, Mon. . . . .  | 1,414  | 10 | 0 |
| PRICE, Newport, Mon. (accepted) . . . . .   | 1,412  | 0  | 0 |
| Hilton & Sons, Newport, Mon. . . . .  | 1,367  | 0  | 0 |

PENGE.

|  |      |   |   |
|--|------|---|---|
| For the Erection of Additional Stabling for Messrs. Carter, Paterson & Co., at their Depot, Maple Road, under the Superintendence of Mr. WILLIAM EVE, 10 Union Court, Old Broad Street, E.C. |      |   |   |
| Harris & Wardrop . . . . .   | £984 | 0 | 0 |
| Aldridge & Jenvey . . . . .  | 880  | 0 | 0 |
| Higgs, Loughborough Junction, S.E. (accepted) . . . . .  | 790  | 0 | 0 |

NOTTINGHAM.

|   |  |  |  |
|---|--|--|--|
| For Excavating and for Foundations, Walling, &c., of Board Schools, Radford Boulevard, for the Nottingham School Board. Mr. G. T. HINE, Victoria Street, Architect. |  |  |  |
| ATTENBOROUGH, Nottingham, accepted at schedule prices.  |  |  |  |

PENRHIWCEIBER.

|   |      |    |   |
|---|------|----|---|
| For Building English Baptist Chapel at Penrhiwceiber.     |      |    |   |
| Protheroe & Son, Aberdeen* . . . . .                      | £685 | 11 | 3 |
| LEWIS, Swansea (accepted) . . . . .                       | 556  | 0  | 0 |
| * This includes boundary wall, not included by Mr. Lewis. |      |    |   |

PLYMOUTH.

|   |     |    |   |
|---|-----|----|---|
| For Building Boundary Wall, &c., in Bath Street, Plymouth, for Messrs. E. P. Bates & Sons, Liverpool. |     |    |   |
| Allen . . . . .   | £91 | 5  | 0 |
| Williams & Weeks . . . . .  | 79  | 10 | 0 |
| Jenkins & Ford . . . . .  | 70  | 2  | 6 |
| Tozer . . . . .   | 60  | 10 | 0 |
| Richard & Ford . . . . .  | 57  | 10 | 0 |
| Pellow . . . . .  | 55  | 0  | 0 |
| Pawley . . . . .  | 47  | 13 | 0 |
| Squires . . . . .   | 45  | 10 | 0 |
| ROBERTS & HURRELL (accepted) . . . . .  | 42  | 0  | 0 |
| All of Plymouth.  |     |    |   |

|   |      |   |   |
|---|------|---|---|
| For the Construction of a 12-inch Pipe Sewer, with Stoneware Pipes, from Old Town Street to Treville Street. Mr. GEO. D. BELLAMY, Borough Engineer. |      |   |   |
| Dart . . . . .  | £127 | 0 | 0 |
| Roberts & Hurrell . . . . .   | 120  | 0 | 0 |
| Smith & Son . . . . .   | 118  | 9 | 0 |
| SHADDOCK BROS. (accepted) . . . . .   | 96   | 0 | 0 |

POOLE.

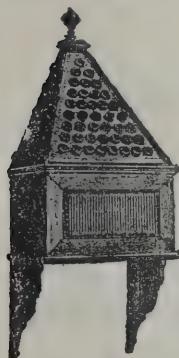
|   |        |    |   |
|---|--------|----|---|
| For Building Minister's Residence for the Trustees of the Wesleyan Chapel, Poole. Mr. H. F. J. BARNES, Architect, Towngate Street, Poole. |        |    |   |
| Crane & Rigler, Poole . . . . .   | £1,125 | 0  | 0 |
| Curtis, Poole . . . . .   | 1,100  | 0  | 0 |
| Gray, Poole . . . . .   | 1,098  | 15 | 0 |
| Pharaoh, Gosport . . . . .  | 950    | 0  | 0 |

# THE "HARDING" VENTILATING COMPANY,

30 EAST PARADE, LEEDS.

## HARDINGS' PATENT AIR DIFFUSER

FOR VENTILATING ALL KINDS OF BUILDINGS.

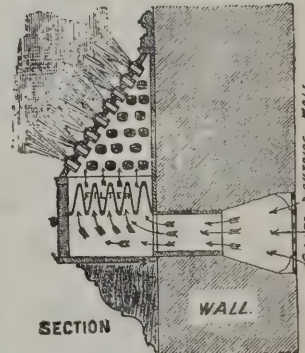


Diffuser with Filter.

Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus, we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



SECTION

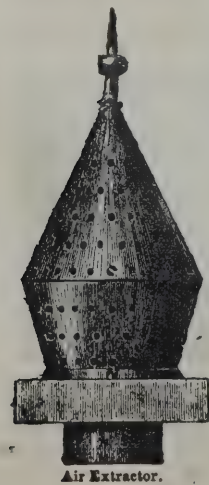
WALL.

**CHURCH WALL VENTILATOR.**—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

**OUR PATENT EXTRACTOR** is the best in the Market, and is supplied at a very much lower price than any other.

**CHURCH WINDOW VENTILATOR.**—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.



Air Extractor.

"Armley, Leeds, Oct. 29, 1883.

"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.



A reduction in price is made where a number of Diffusers is required. Estimates and further information given on application to the "HARDING" VENTILATING CO., 30 East Parade, Leeds.



## RAYLEIGH.

|   |      |       |
|---|------|-------|
| For Building Wesleyan Chapel, Rayleigh. |      |       |
| Bullock, Southend                       | £892 | 10 0  |
| Norden, Rochford                        | 846  | 8 0   |
| Reed, Burnham                           | 815  | 0 0   |
| Carlton, Southend                       | 795  | 10 11 |
| Gozzet, Woodham Walter                  | 772  | 10 0  |
| Alp, Shoeburyness                       | 770  | 17 6  |
| Darke & Son, Southend                   | 765  | 0 0   |
| Allen, Southend                         | 760  | 0 0   |
| Woodhams, Southend                      | 730  | 0 0   |
| Ainsworth & Baker, Rayleigh             | 727  | 0 0   |
| STEWART, Southend (accepted)            | 696  | 17 10 |

## RIPPONDEN.

For Building Schools and Assembly Room, Stone, Ripponden. Mr. JAS. CRAWSHAW, Architect. Quantities by the Architect.

## Accepted Tenders.

|  |      |      |
|--|------|------|
| Crawshaw Bros., Ripponden, excavator and mason | £742 | 0 0  |
| Whiteley, Rishworth, carpenter and joiner      | 335  | 0 0  |
| Hoyle, Sowerby, slater and plasterer           | 156  | 0 0  |
| Holdsworth, plumber and glazier                | 129  | 0 0  |
| Garside, Ripponden, heating apparatus          | 34   | 17 6 |
| Moore, Ripponden, painter                      | 16   | 19 0 |

## ROWLEY REGIS.

For Building School for 400 Children, Spinner's End, for the Rowley Regis School Board. Mr. J. T. MEREDITH, Architect, Kidderminster. Quantities by the Architect.

|                            |        |     |
|----------------------------|--------|-----|
| Nelson & Son, Dudley       | £3,274 | 0 0 |
| Williams, Rowley Regis     | 3,267  | 0 0 |
| Walton Bros., Birmingham   | 3,250  | 0 0 |
| Horton, Brierley Hill      | 3,250  | 0 0 |
| Holland & Son, Dudley      | 3,025  | 0 0 |
| Thompson, Kidderminster    | 2,999  | 0 0 |
| Willetts, Old Hill         | 2,943  | 0 0 |
| Trow & Sons, Wednesbury    | 2,900  | 0 0 |
| Guest, Stourbridge         | 2,900  | 0 0 |
| Jones & Sons, Sedgeley     | 2,795  | 0 0 |
| Malin, West Bromwich       | 2,758  | 0 0 |
| Dorse & Son, Cradley Heath | 2,686  | 0 0 |
| Cockin & Son, Old Hill     | 2,633  | 0 0 |
| Bate, Dudley               | 2,298  | 0 0 |

## ROWLEY REGIS—continued.

|   |        |     |
|---|--------|-----|
| For Enlargement of Tivdale School for 70 boys and 60 girls, for the Rowley Regis School Board. Mr. J. T. MEREDITH, Architect, Kidderminster. Quantities by the Architect. |        |     |
| Smith & Son, West Bromwich  | £1,249 | 0 0 |
| Nelson & Son, Dudley  | 1,212  | 0 0 |
| Thompson, Kidderminster   | 1,199  | 0 0 |
| Walton Bros., Smethwick   | 1,132  | 0 0 |
| Bate, Dudley  | 1,050  | 0 0 |
| Holland & Son, Dudley   | 1,050  | 0 0 |
| Horton, Brierley Hill   | 1,050  | 0 0 |
| Guest, Stourbridge  | 1,040  | 0 0 |
| Jones & Sons, Sedgeley  | 1,000  | 0 0 |
| Willetts, Old Hill  | 994    | 0 0 |
| Williams, Rowley Regis  | 977    | 0 0 |
| Trow & Sons, Wednesbury   | 950    | 0 0 |
| Cockin & Son, Old Hill  | 940    | 0 0 |
| Dorse & Son, Cradley Heath  | 923    | 0 0 |
| Malin, West Bromwich  | 910    | 0 0 |

## SOWERBY BRIDGE.

For Construction of Wrought-iron Lattice Foot-bridge, 86 feet span, Sowerby Bridge. Mr. HENRY WHITLOW, Engineer.

## Accepted Tenders.

|   |                        |
|---|------------------------|
| Spun & Inman (Limited), Wakefield, ironwork | £15 per ton            |
| Motley, Sowerby Bridge, mason               | 9s. 6d. per cubic yard |

## SPILSBY.

For Building Infirm Wards, Lying-in Wards, Washhouses, and Laundry for the Spilsby Union. Mr. J. EDWIN BUTCHER, Architect. Quantities not supplied.

|                               |        |      |
|-------------------------------|--------|------|
| Hunter & Son, Spilsby         | £2,139 | 0 0  |
| Crawshaw, Skegness            | 2,133  | 0 0  |
| Sherwin, Boston               | 2,125  | 0 0  |
| Story & Son, Bourne           | 2,085  | 0 0  |
| Dunkley, Skegness             | 2,075  | 0 0  |
| Turner, Wainfleet             | 1,947  | 0 0  |
| Holmes, Wainfleet             | 1,922  | 0 0  |
| Scarborough, Spilsby          | 1,900  | 0 0  |
| Richardson, Leake             | 1,895  | 0 0  |
| GREENFIELD, Boston (accepted) | 1,785  | 15 0 |

## TRURO.

For Building Wesleyan Chapel, School-rooms, and Vestry, at Edgecumb, Wendron. Mr. SILVANUS TREVAIL, Architect, Truro. WINN, \* Helston (accepted) £698 0 0  
\* Exclusive of granite work.

## WAKEFIELD.

For Rebuilding St. Michael's Vicarage, Wakefield. Mr. WILLIAM WATSON, Architect, Wakefield. Quantities by the Architect.

## Accepted Tenders.

|   |  |
|---|--|
| Flower Bros., excavating, brick and stonework.                      |  |
| Rycroft, slating.   |  |
| Driver, plastering.   |  |
| Lloyd, carpenter and joiner work.                                   |  |
| Thompson, plumbing, glazing, ironwork, bellhanging, and gasfitting. |  |
| Turner, painting.   |  |
| Total, £1,352 17s. 6d.  |  |
| Sixty tenders were received.  |  |

## WEMBLEY.

For Laying Out, Draining, and Enclosing Burial Ground, for the Wembley Burial Board. Mr. CHAS. JONES, Architect, 151 Ebury Street. Quantities by Messrs. Beesley & Williams, 9 Buckingham Street, Adelphi.

## Castle.

## Killingback.

HAYNES (accepted).

BUILDING EXHIBITION AT THE  
AGRICULTURAL HALL.

WE now resume our notices of the exhibits at the Agricultural Hall, which have been unavoidably postponed till this week.

## John Bolding &amp; Sons.

Messrs. JOHN BOLDING & SONS, South Molton Street, W., have on view a thoroughly representative exhibit, including a large array of specialities, &c., of a most interesting and high-class character. There is a goodly show of brasswork, hydrants, &c., and fittings of every variety, lavatories, baths, closets, urinals, pumps, &c.; slop-sinks of slate,

## ARTISTIC ♦ VENTILATION. ♦

SHARP & CO., Hygienic and Hydraulic Engineers.

## TESTIMONIAL

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

HYDRAULIC RAMS (FYFE'S PATENT) AND SANITARY APPLIANCES.

Health Exhibition Awards:—1 GOLD, 1 SILVER, 4 BRONZE MEDALS.

11 HOLBORN CIRCUS, LONDON, E.C.

PRIMROSE & CO.  
CHURCH ST.  
SHEFFIELD.

ECLIPSE PATENT  
ROOF GLAZING

NO PUTTY, PAINT,  
ZINC OR OTHER  
PERISHABLE MATERIAL.

IN EXTENSIVE USE FOR RAILWAY STATIONS, MILLS, &c.

NO OTHER GLAZING CAN BE WARRANTED INDESTRUCTIBLE.

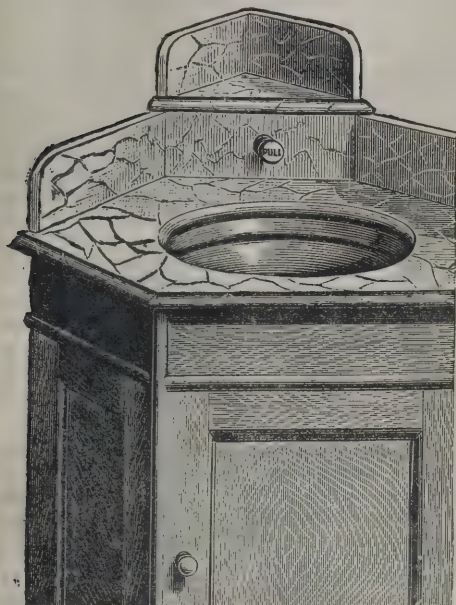
PRIZE MEDAL AWARDS; KENSINGTON, MANCHESTER, LIVERPOOL, DONCASTER 1882-3.  
THE ONLY GLAZING AWARD. INTERNATIONAL HEALTH EXHIBITION, 1884.

## VOLUME XXXII. OF THE ARCHITECT.

Handsomely bound in Cloth, Gilt Lettered. Price 12s. 6d.—Office: 175 Strand, London, W.C.



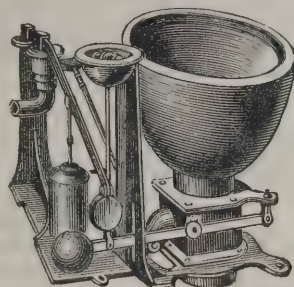
enamelled iron and earthenware. Garden and fire-hose, speaking tubes, with whistles and mouthpieces may also be seen. Among the specialities shown are valve-closets—"Simplex," "Grosvenor," and "Argosy;" patent wash-out closets, and "National," "Alliance," and "Crown" closets. The cabinet-work shown in connection with lavatories and closets is on a par with the reputation of this firm for the excellence of their articles. We are able to call attention to a lavatory with a double-action valve, now exhibited for



the first time. It has great merits which deserve special recognition, and if we mistake not it is likely to become a favourite in clubs, hotels, restaurants, better class houses, &c. Often a minute of time saved means the saving of half an hour or more. You wash, say, in a

lavatory fitted with these new specialities of Messrs. Bolding. It is perfectly clean, no dirty or soapy remnants whatever, though someone has only just left it. The next comer simply pulls out a handle, and washes straightway, and pushes back again the handle as he takes the towel. All is then clean and ready for the next user. To speak more accurately, when the handle is pulled out it locks with a quarter turn, the basin fills itself, and the water stops flowing automatically when the basin is full. The basin has a perforated flushing rim through which the water fills the basin. When the handle is released, the waste water escapes, and the valve is opened, which gives a flush that thoroughly cleanses the basin. The perfection of the invention for lavatory purposes will thus be seen. This self-cleansing principle, so to speak, is also shown in its application to closets, and here the main principle may be said to consist in this, that no matter how long you hold up the pull, there is always an after-flush on releasing it. Also are shown McGill's patent urinals, and Bolding's automatic cistern. There is no metal used in

"SIMPLEX"



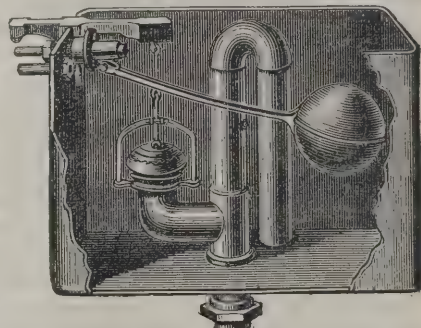
the construction to get corroded. Unlike any other urinals, they are made of glazed stoneware. The facings are of enamelled slate. They are always clean and practically indestructible. They are flushed automatically, the flush being timed for every half hour. Bolding's Patent "Bottle" Traps are much in request, which proves the excellence and efficiency of a

speciality which was first brought before the public at the Health Exhibition. It is particularly suitable for kitchen and butler's pantry



sinks, the special point being that the escape of sewer gas is prevented, it being impossible to break the seal by syphonage. The dip is made to remove at will, so that it can be unstopped without any trouble, and a cup catches and prevents foreign matter passing into the pipes.

"SYPHON" WATER WASTE PREVENTER



Also are shown most effective apparatus in water-waste preventers, single and double, and also the capital automatic syphon water-waste preventer. The cabinet-work shown has been

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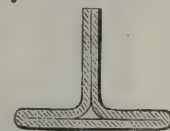
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alluded to, but mention should be made of a portable closet, a most handsome piece of furniture, in the shape of an elaborately-carved chair richly upholstered. Notwithstanding the entirely practical contents of this exhibit, all the articles, from the largest to the smallest and most ordinary objects, are so beautifully finished off that the stand has a most attractive appearance.

#### Lincrusta-Walton.

Messrs. F. WALTON & Co., of Sunbury-on-Thames, have a handsome pavilion constructed to illustrate the artistic effect which can be attained by the use of their Lincrusta-Walton, or Sunbury wall decoration. It contains a dining-room, the decorations of which, of a pale green colour, are designed with a view to acting as a set-off to the other appointments of such a room, and the filling, while rich and handsome in itself, would form an admirable background to pictures. The dado is a successful attempt to produce an effect equal to carved wood dado, in harmony with the general scheme of the decoration. The picture rail is a much more decorative feature than an ordinary picture rod, while it is essentially quite as useful. The door panel decoration is especially worthy of notice, as it is a new design arranged for the purpose of fitting panels from 5½ to 12 inches in width, and of any length, and allowing of each panel being a complete and artistic decoration. The hall is treated in warm, reddish colouring, intended to act as a decorative contrast to the dining-room, the lower part being an excellent pattern, fully producing the effect of leather both in its relief and treatment. Another decoration in old gold, with leather coloured ground, is a new and beautiful design, Renaissance in character, and the treatment is after the style of old leathers. Several capital examples of machine decoration are the first efforts in a new departure, and are likely to prove of value to the trade as well as to the general public. Most of the patterns in the exhibit are new this season. The furniture in the dining-room is by Messrs. Edwards & Co., 8 Soho Square, who turn out good work as makers of cabinet-fittings, mouldings, &c.

#### Stone Bros.

Messrs. STONE BROS., Bath Stone Office, Bath, show samples of the Bath stone from their quarries. The varieties shown are Combe Down, a material that differs considerably in quality according to locality, that from the Lodge Stile Quarries being a thorough good weather stone, and can be used with safety at any season of the year for any building purposes, however exposed the situation may be. It is of a light colour, free from soft yellow beds. Box Ground, a good weather stone, of a warm colour, sound, and in blocks of any required length. Stoke Ground, regular in texture, sound, and free from soft beds and hard veins. Used externally as a weather stone, as well as for inside dressings. Farleigh Down, a soft and very fine quality, cheaper in working than any other kind of Bath stone, and of a rich yellow tinge, in two varieties, brown or red bed. It is recommended for all external works except plinths, string courses, copings, &c. The white bed is well suited for tracery and internal purposes. The beds vary in depth from 10 inches to 3 feet 6 inches. Corsham Down, which is of fine texture, sound, and works well for carvings, mouldings, and tracery, but should not be employed for exposed purposes. Also Westwood Ground, &c.

#### Young & Co.

Messrs. FREDERICK YOUNG & Co., Clerkenwell Green, show sample cases for telegraph instruments, telephones, electric bells, &c., made by their American dovetailing machines. Several firms in the cabinet trade have given large contracts to these gentlemen for executing dovetailing, the system being both economical and exceedingly neat.

#### Roger L. Lowe.

Mr. R. L. LOWE, Britannia Works, Farnworth, near Bolton, shows samples of his improved wood-block flooring. This flooring has been found a most excellent system wherever durability, noiselessness, perfection of workmanship, smoothness of surface, freedom from splintering, cracking, working loose, &c., is desired, and

not only can stand, but has stood the test of continual and heavy traffic passing over it. This result is obtained by use of the best materials, and by adopting the most perfect system of laying, besides which, a patent preservative composition plays also an important part in the work. It is this glue-like composition which permanently fastens the wood-blocks to the concrete, while nothing short of destroying a block will detach it after once it is placed in the composition. The composition has this further advantage, that it forms as it were a sort of cushion for the wood-floor, a result all in favour of the durability of the wood-blocks, owing to a slight elasticity imparted instead of absolute rigidity. The usual way of laying wood-flooring is to bed the seasoned blocks on concrete in wet mortar cement. Where you employ seasoned wood it is against common sense to bed it in concrete while wet. The seasoned blocks swell, and then again rise under heat, which produces disintegration of the floor. Mr. Lowe carefully avoids this. They are laid on a carefully-prepared concrete floor, thoroughly dry, fitted together to insure perfect accuracy of adjustment, and then each block is dipped in the liquid composition while hot, and laid into position at once, and so a beautiful solid floor is obtained. The work has proved itself; but, in addition, Mr. Lowe is quite prepared to guarantee it.

#### Maw & Co.

Messrs. MAW & Co., Benthall Works, Jackfield, near Ironbridge, Shropshire, display their pleasing pavement tiles in many varieties all excellently designed. A beautiful reredos arrangement shown at the exhibition at the Floral Hall is to be seen here again. It is of decorative majolica and mosaic, with combined enrichments carefully harmonised. Specimens of plain, encaustic, patent, and Florentine mosaic, incised and intaglio pavement tiles are shown, and there are plain, glazed, and decorated, enamelled, embossed, and painted tiles for walls, fireplaces, hearths, &c. The name of the firm is sufficient guarantee of the excellence of their wares.

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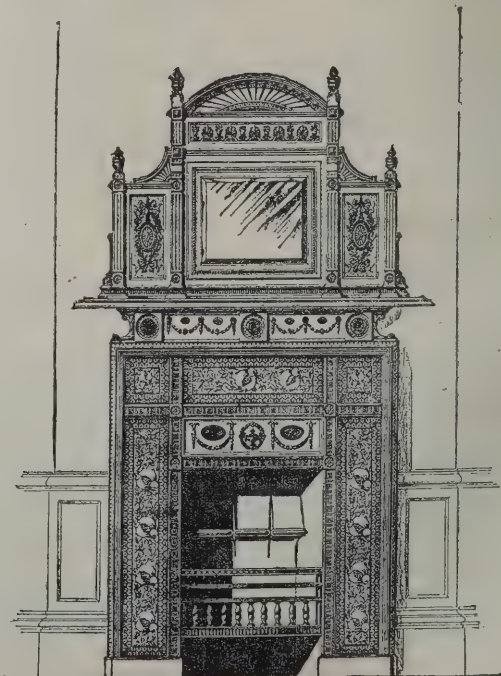
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*G. Middleton Edwards.*

A model of a section of the outer wall of a two-storey house is shown by Mr. G. M. EDWARDS, of 54 Gresham Street, to illustrate the application of his patent iron laths, which will be found of great utility in the construction of fireproof walls, partitions, ceilings, &c. Mr. Edwards also shows his patented corrugated iron sheets for use in combination with concrete for fireproof floors, &c.

*H. Thompson & Co.*

Two small sections of brick wall, exhibited by Messrs. THOMPSON & Co., of 95 Marrow Street, S.E., serve admirably to show the damp-proof character of their patent oxide paint, with which one of the specimens is coated, while the other is papered, and both are exposed to the action of water. Messrs. Thompson have also on view some enamel paints and stains for wood.

*William Edgumbe Rendle & Co.*

Messrs. WILLIAM EDGUMBE RENDLE & Co., 3 Westminster Chambers, Victoria Street, S.W., show the well-known Rendle's patent systems of glass roofing for railway stations, markets, workshops, weaving sheds, skylights, exhibition buildings, conservatories, plant houses, orchid houses, &c., the special advantages of which are a great saving in cost of maintenance and repairs, no breakage from contraction or expansion from heat or frost, that squares of glass can instantly be replaced, that construction is strong and durable, and the glass put on in one-fourth the time of the old plan, no drip from condensation, and all woodwork is covered and sheltered from the weather by the glass. Rendle's patent "acome" glazing is used solely by the Government at the Woolwich Arsenal and Dockyard for the last seven years. The long list of works executed by the firm would fill pages. No better testimonial of the excellence of this system of glazing without putty, &c., could be wished for. Some of the largest and most important roofs in the country are among the works completed. Seven million

square feet of the patented system have been already fitted in Great Britain, the largest area being the new Citadel Station, Carlisle, containing 350,000 feet super.

*Eck, Callow & Co.*

Messrs. ECK, CALLOW & Co., of 10 and 11 Dean Street, Holborn, exhibit their application of electricity to the ringing of church bells, by which one person can ring any number of bells, of any size, without fatigue, and by a simple arrangement of keys. Brown's patent electric fire alarm keeps itself always under test, and gives an immediate warning on the slightest outbreak of fire in any part of the building where it is applied. The new form of pendulum indicators for electric bells requires no readjustment by hand after ringing, and continues to indicate for five minutes after the bell has rung. Harrison's burglar alarm gives instant notice of intrusion on the premises. Artistic pushes, in metal, terra-cotta, Doulton ware, &c. Portable bell-sets for invalids and travellers. A very clever and economic deodoriser and disinfectant for water-closet cisterns, which is perfectly automatic, and can be applied to any flushing cistern in two minutes, is also applicable, charged with other chemical material, for use in ordinary cisterns, to soften and purify the water for domestic use.

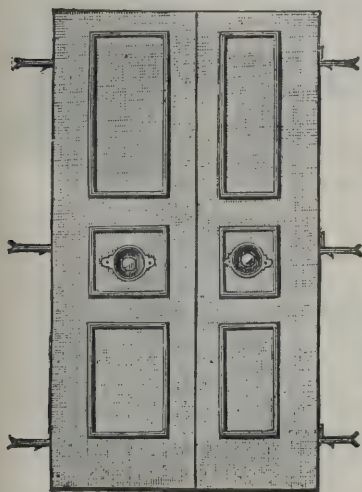
*Indestructible Paint Company.*

THE INDESTRUCTIBLE PAINT COMPANY, Limited, 27 Cannon Street, E.C., occupy a prominent position in the hall, where they show the various preservative paints and preservative solution, with samples and models to show the application and portions of material, to show how effectual the use of the paints, &c., has proved. A gold medal (highest award) at the Health Exhibition, and diploma of honour (highest award) at the Fisheries Exhibition, were conferred on the Company for Browning's permanent preserving solution and paints. The preservative solution has been used with success for withstanding action of the atmosphere, and

preserving and rendering weatherproof stone, marble, cement, brick, &c. The preservative paints for all kinds of purposes, including painting and decoration for hospitals, asylums, schools, houses, for iron structures, and painting ships, have given satisfaction wherever used. Every possible shade is provided to meet individual tastes or requirements, and the paint has proved its efficacy under all sorts of trying circumstances—weather, damp, &c. Any one can form a good idea of the efficacy of the solutions and paints by looking at the samples and models shown. In the case of damp having rotted the plaster of a wall, a large piece shelled off and came down, and shows material held together where treated with the paint, the paint showing a beautiful gloss, as when first put on. Samples of painted iron, as used on the telegraph ships, and other iron ships, with testimonials from Captain Richardson. The paint is used on the iron roofs of the Houses of Parliament. Plaster casts, friable bones, fossils, &c., at South Kensington, are preserved by the solution. Capital fossil specimens, sponges, corals, &c., may be seen at the stand thus preserved; the specimens were taken from Kent out of the chalk. For models, casts, &c., it has also been used at art schools in Manchester, Blackburn, Dover, and Croydon, and at the Manchester Grammar School. We cannot now do more than refer readers to lists, showing where the productions of the Company have been used, and to the testimonials of the firm.

*Henry Smyth.*

Mr. HENRY SMYTH, Ekman's Wharf, 33 Wharf Road, City Road, N., sole agent for the United Kingdom for Ekman's Mechanical Joinery Company (Limited), of Stockholm, shows a collection of Stockholm-made yellow doors, mouldings, architraves, skirtings, and trellis-work, Swedish school desks, sashes, and frames—all of the best quality of well-seasoned Baltic yellow. The workmanship is certainly excellent, and it is most convenient to have access to such goods when required at short notice. The expanding trellis-work is a most useful article for many purposes.



# WALTER JONES,

MAGNET WHARF, BOW BRIDGE, E.

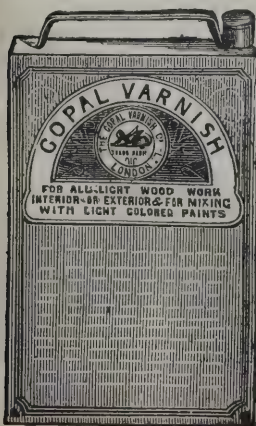
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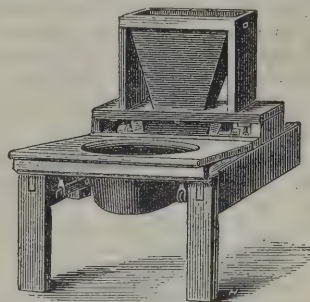
*Guy & Stevens.*

Messrs. GUY & STEVENS, Ceres Ironworks, Kingston-on-Thames, show excellent and substantial work. At their stand are to be seen specimens of cast-iron manhole frames and covers with wood blocks, ventilators, &c.; gully grates and castings of every description. The improved builders' screens should be noticed as most durable articles, especially in heavy work such as screening gravel. The improvement consists that instead of fixing the wires to the cross bars by wire, the wires pass through holes punched in the cross bars. The cross bars are of stout hoop iron rivetted into a strong iron frame. They are punched by machinery with holes the exact size of the wires, and at correct distances apart. Through these holes the wires, which are very stout, are driven and compressed, thus making an almost indestructible screen, and the wood frames are very strong.

*Moule's Patent Earth-Closet Company (Limited).*

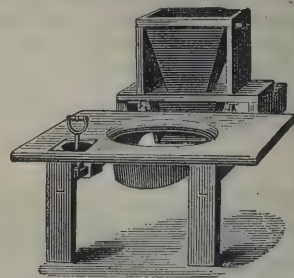
This company exhibit specimens of the earth-closets and apparatus typical of the system, and manufactured in varieties suitable for any position or requirement, or any building or part of a building. The earth principle is the only perfect one. This is a commonplace fact, and no figure of speech. In the next place the principle has been reduced to practice, and is now utilised by skilfully devised apparatus, simple and convenient in working. A beautifully made model exhibited shows the application of a block or series of the earth-closets to school purposes. Two parallel rows of closets, back to back, with central gangway between, giving access for the removal of receptacles and filling in of earth, are built in a yard enclosed by brick walls. Access to the closets is gained from the playgrounds. Boys' and girls' playgrounds being separated by a party wall, the school children can only get access to their respective block, and besides are otherwise entirely shut off from access to the yard. The main part of the yard is entered from outside. Two large gateways admit carts, &c. There is a furnace, with plate for drying earth, and gateways

can be opened and the louver boards removed from the louver windows in wall near furnace to admit air and sunshine more freely. Besides removing the receptacles by means of the central gangway at back of the closets, a very simple arrangement for supplying earth is by means of a long continuous trough, which feeds all the apparatus, however many they may be. The block of closets shows a gabled roof, with lantern light running the length at top, the sides of lantern having louver boards for ventilation. The closets are used extensively, and in every way they have been found to be most satisfactory. They are in use



among other places at the Sutton (Surrey) Board Schools, St. Mary's Orphanage, Hounslow, and at the Charterhouse Schools, Godalming, schools and masters' houses throughout being fitted with them. During the last sixteen years there have been 150 closets at the Wimbledon camp, besides urinals, commodes, &c., for camp hospitals. The company have carried out many contracts for the Government at home and in the colonies. Also they have supplied the depot for the Suakim and Berber Railway, and also the camps and hospitals; also the Eastern Telegraph Company, &c. Among the many prizes awarded to the system, a certificate of the first class was awarded to a new patent earth-closet (No. 9)—a "pull-up"—at the Medical and Sanitary Exhibition. It shows only an earthenware basin or rim, with a layer of clean earth resting

on a valve that serves to conceal the receptacle beneath it. When the handle in the seat is raised the soil on the valve is upset into the receptacle, and on the handle being let down



again a fresh layer of earth is discharged on to the valve. This apparatus is made in teak and mahogany, and sent out ready fixed for placing in position. The gold medal, it will be remembered, was awarded at the Health Exhibition for the earth-closets, as being most effective. The system, indeed, cannot be too highly recommended, and it is a pleasure to note that the firm have been kept as busy as possible all the winter.

*George Porter.*

Mr. GEO. PORTER, of 23 Cullum Street, shows his system of electric and pneumatic bells. The latter, as is suggested by the name, are worked by a current of air which passes from the push to the indicator, through the medium of a very small tube. Both the push and the indicator are fitted with metal cylinders and pistons.

*Ewart & Son.*

Messrs. EWART & SON, 346 Euston Road, N.W., occupy a central position in the hall, and their exhibit has proved most attractive. Conspicuous in the middle of the stand is a trophy of ornamental zinc surmounted with an embossed copper finial, an apt illustration of what can be done in this direction, when good design and high workmanship are brought into play. On the floor is a show of baths, in various forms, with sprays, waves, douches, showers,



# INTERNATIONAL HEALTH EXHIBITION: GOLD MEDAL AWARDED. REDUCTION IN PRICE.



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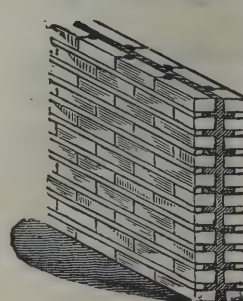
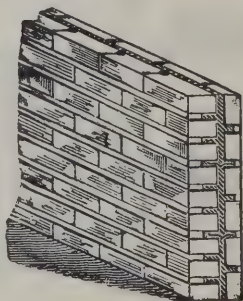
To meet the rapidly-increasing demand, the Patentee has recently made extensive additions to his Machinery and Plant, which enables him to effect

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A brick on flat and one on edge wall, suitable for Cottages, or where great economy is required. It is quite damp-proof and equal in strength to a 14-inch wall built with mortar only.



A wall built two half bricks on the flat is much stronger than an 18-inch wall built in the ordinary way.

# DAMP WALLS.

## BLUNDELL'S PETRIFYING LIQUID

Is a preparation for interior use, for the cure of DAMP WALLS. It is made in two colours, White and Red. It is applied with a brush as easily as ordinary paint, and dries hard in a few hours with a glazed surface. The many uses of such an article are obvious. As an economical substitute for White and Red Glazed Bricks, for interior walls, it is most efficient. Applied over brick, cement, iron, or wood, for the walls of passages, kitchens, schoolrooms, hospitals, and charitable institutions, where CLEANLINESS is indispensable, it will be found invaluable, as the smooth enamelled surface offers but little hold for dirt, &c., and can be washed when necessary. Used over walls before papering, it prevents discolouration, and offers a surface to which the paper will adhere firmly. Economical in cost, simple in application, and efficient in use. The proprietors recommend it with full confidence. To be obtained of the leading Paint Colour, and Varnish Dealers.

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# VOLUME XXXII. OF THE ARCHITECT.

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&c., with gas boilers for providing hot water. The baths should be inspected. They are shown with boiler combined, as also others without. A capital zinc bath with brass fittings is specially constructed of extra thickness, and thus rendered a thoroughly durable and lasting article, notwithstanding its inexpensiveness. Elaborately got up baths are cased in polished mahogany, walnut, or other woods, with silver-plated mountings. Besides the bath with hood having spray, shower, wave, douche, &c., and boiler by side forcing water to top, is a bath similar in every respect, but without hood. This is most useful where circumstances would not permit of placing a hooded bath. It is a luxurious bath, where the bather sits at his ease in his bath, and at will is played on by wave, spray, or any other of the pleasant modes devised for showering water on him. In another part of the Hall are stamped zinc friezes, ornaments, building enrichments, and also fine ornamental zinc dormers and cornice. In addition to the above are shown specimens of window conservatories, and a selection of ornamental tiles for flower boxes. One special exhibit is the "Empress" ventilator—an old and tried friend—now made in hardened copper, instead of japanned iron as formerly.

*Frederick Henry Smith.*

Mr. FREDERICK HENRY SMITH is the inventor, patentee, and sole manufacturer of Smith's patent automatic siphonic aspirator system of ventilation, lighting, and heating, the patent being designed to solve the problem how to create ventilation without draught. Mr. Smith's stand is intended to notify the existence of the system, and more especially to invite visitors to inspect personally the system at the test-room, at 52 Queen Victoria Street, E.C., as it would be impossible to show it at the hall, except in a fragmentary way. We hope our readers will take advantage to make a visit of inspection to Queen Victoria Street.

The most sceptical will be convinced that Mr. Smith has succeeded in solving the problem of ventilation without draught by a visit to his test-room. As to construction, the aspirator or

metal lungs—a by no means inappropriate term—may be made in any metal or other suitable material. It consists of three circular plates of nearly equal dimensions. The top plate, or disc, has a circular opening in the centre of the diameter required for an outlet pipe to pass through it, utilised for carrying off vitiated air from the room or building in which it may be placed. This outlet pipe forms the neck of the second plate or disc; the flat plate from which it is carried is perforated, the diameter of the holes being determined by the size of the aspirator used, and the same are placed near the outer edge of the flat plate. This outlet or neck curves gradually up from its base before it is carried through the circular opening of the top cover before mentioned. The third plate or disc, which is also the base of the aspirator, is slightly larger, and the two other plates drop into it and are thus held in position. To provide for the air-way between the three circular plates being properly maintained, small iron tubes are provided, which keep the plates equidistant one from the other. To deflect the heated or vitiated air into the aspirator the outer edge of the bottom plate is inclined slightly upward. From the top cover is carried a smaller pipe, somewhat less in diameter than the "outlet pipe," which is the inlet or inspiring pipe for conveying fresh air into the air chamber between the top cover and perforated plate or second disc. The air thus conveyed into the top air chamber filters through the perforations into the lower chamber, and, thus split up, escapes through the annular space formed by the depth maintained between the second and third plates. The opening in the middle plate slightly sails over the bottom disc with a nicely graduated curve, so that air passing through the annular space creeps, as it were, up and around the sides of the outlet pipe, and by capillary attraction or air-suction levers, so to speak, the hot and vitiated air from the room below into this aerial weir, which once having passed into it, is rapidly dispersed and carried off into the outer air. This aspirator is adaptable for all kinds of buildings with one or many floors. Another aspirator shows a different

arrangement for introducing fresh air into the air chambers, an arrangement which is considered by some scientific authorities as an improvement upon that with the inlet tube for a like purpose. Its use would, however, be restricted to buildings of one chamber, whose roofs communicate direct with the outer air; and would not be available where there are a series of floors one above the other. The improvement consists in a modification of the arrangement of the top or outer cover, which has a circular opening in its centre, and so cut away as to admit of an annular space between it and the neck of the second disc, after passing through it. This annular space round the neck of the second plate acts as an inlet for fresh air, which passes down all round the intervening space between the top cover opening and the neck of second plate into the air chamber between the outer cover and perforated plate. In practice this should answer excellently well, and will obviate draught or blast of any kind. This form of inlet the patentee calls the "jacketed inlet;" as another advantage it renders unnecessary a second inlet tube. The air spaces between the discs and the due connection of the several parts with each other have been scientifically and mathematically worked out. Too often, ventilating systems display a total disregard of natural laws, which insures failure, and Mr. Smith's success must be largely attributed to his recognition of this fact. Next week we purpose giving a description of the application of the system to buildings.

*Harry Hunt.*

The collection of stoves exhibited by Mr. HARRY HUNT, of Newington Green, contains some of very pleasing and artistic design, among which the most notable are "The Hygiene," which is intended for entrance halls and similar positions, and which possesses the advantage, in addition to its good external appearance, of requiring feeding only once in thirty-six hours. "The Crown Jewel" and "The Victoria." Mr. Hunt has also a patent kitchener and patent regulating grate, &c.

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY. VENTILATION WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator system of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the luminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

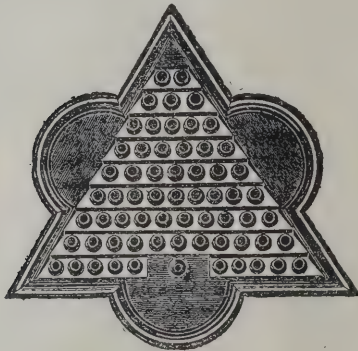
*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite noxious at the level of about 7 feet, the temperature being about 60 deg. Fabr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



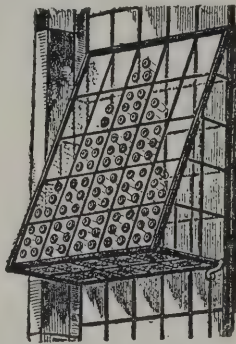
*Harding Ventilating Company.*

The HARDING VENTILATING COMPANY, 30 East Parade, Leeds, here exhibit their scientific method of ventilating buildings without draught for the first time in the South of England. The present is indeed only the second time the company have exhibited, the first occasion being at the Building Exhibition in Leeds. As the firm do a large business in the North of England, they have been well advised in showing to the public in this part of the country what they can do, and it must be conceded that they have devised an economical system of ventilation, which must prove effectual in excluding draught and dirt while admitting fresh air. The principle is to conduct fresh air into the room or building to be ventilated through a grate or aperture in the wall, thence conveying it through a filter, whence it is passed into the room through a series of small tubes placed at an angle of 30 degrees with the wall. The currents of air are compressed while passing through the tubes, and on their escape they expand and break each other up, and thus diffuse a large volume of fresh air evenly and without draught. The apparatus, as seen within

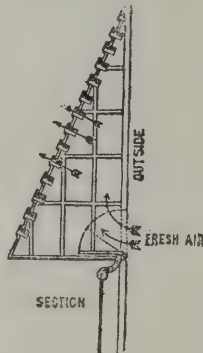


the room, takes an ornamental form if required, so as to be in perfect harmony with room decorations, &c. The engraving shown represents one

designed for churches. They are much used in the north for all sorts of buildings, and in a plain style they are used for ventilating mill works. The filtering medium is silk gauze, running zigzag fashion backwards and forwards through



the grating, instead of merely a facing of gauze over the aperture. If the aperture be 8 inches, instead of 8 inches of filtering gauze there are several feet. Harding's patent air-extractor,



used in connection, where the room has no outlet by flue from fireplace or the like, consists of two perforated cones and a central tube, the

small inner cone being simply to prevent the rain from getting into the tube. The external air impinging upon the perforated cones is deflected, creating an induced current up the vertical tube, drawing the foul air from the interior of the room, and expelling it through the perforations. The extractors are designed so that they can be placed inside an ornamental turret, the action of the extractor being in no way affected by so doing. A window diffuser is also shown, which is very suitable for churches, schools, &c., and obviates the necessity of cutting through walls, being useful also for buildings where plenty of fresh air is wanted. The window is like a hold-up window reversed, the small inlet tubes being through glass instead of through wood cases, as in the other diffusers.

*Muldoon Bros.*

Messrs. MULDOON BROS.' exhibit consist of models of road pavement, wood block paving, herring-bone bricks for paving churches &c., Seyssel asphalt, British asphalt, damp course, bricks, &c., marble and enamelled slate chimneypieces in various styles, fenders, tablets &c., &c.

*P. A. Maignen.*

Mr. MAIGNEN shows his patent "Filtration rapide" as applied to households, factories, and waterworks, and as supplied to the Nile and Suakim expeditions. Also the patent water softening process. The object sought for in making this filter was to produce an article which would turn out perfectly pure water. This was to be accomplished by introducing a material that could communicate any offensive or injurious quality to the water, by securing the removal from the water in the filtering process of all suspended matter, even to the smallest bacterium or bacillum, as also organic and inorganic matters in solution, such as iron or lead among the latter, and by aeration of the water during filtration. Lastly, to produce an apparatus so constructed that the purchaser can himself take it entirely to pieces, throw away the old filtering materials, and replace it by fresh with little trouble and at slight cost.

The ONLY MEDAL for Tiles at the INTERNATIONAL HEALTH EXHIBITION, 1884,  
WAS AWARDED TO

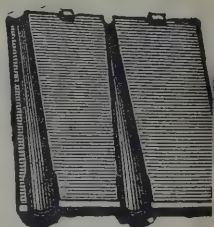
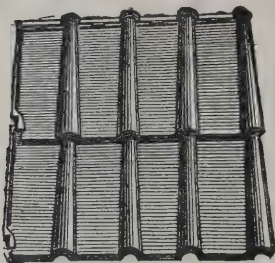
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ld, silver, and other medals, with diplomas of honour, testify to the success which has attended the endeavour of Mr. Maignen to produce a perfect article. The means by which the result has been obtained—in other words, the construction of the filter, the composition of the filtering materials, the mode of aerating the water—has been before described in this journal, and may be seen at the present exhibition. Persons who have not tried them will find a satisfactory voucher for their efficiency in the fact of their being used by the Government in the Soudan campaign. The principle is carried out for purifying water on a large scale, and Mr. Maignen estimates that it can be cheaply used for filtering water-supplies to villages, towns, &c. The patent process for softening water is devised to act on small quantities of water, and also furnish supplies of softened water on a large scale.

*Wilkes' Metallic Flooring and Eureka Company (Limited).*

THE WILKES' METALLIC FLOORING AND EUREKA COMPANY (Limited), 17 Devonshire Square, E.C., make a most varied and imposing show. The first thing that strikes the eye is a handsome Ionic portico, executed in red concrete, with fine columns and pilasters, carrying an enriched entablature. Among the many applications of the material will be admired the examples of balustrading, and one is a fac simile of work taken from old Northumberland House. There is a beautifully executed head to form a balustrade; and a curiosity, exceedingly ornamental, by the way, is a skilfully executed perforated enrichment put into a hollow cove in a building. Also very effective are the hammered coigns, Scotch in character, just as they came from the mould they were cast in. Garden fountains are varied by ridge tiles, &c.; and, coming to more ornamental articles again, concrete figures under the shapes of birds and flowers. And there are busts and statues, medallions, panels, and friezes, figured, floriated, and of enriched design. Mr. W. Millar, foreman to the firm, is responsible for the designs

of all the work throughout, as he designed it. He certainly needs no other testimonial of his powers than what is seen in his excellent work. Among these ornamental works a bust of the Prince of Wales may be seen, also a fine plaque representing *Flora*, and among the figure-castings is a *Venus de Milo*, the casting of which was done in one hour. Some of our readers may be astonished when it is said that this firm can by their hardening process, which is employed throughout for all productions, cast figured or other work, however delicate the details may be, in an hour's time out of gelatine moulds, and several casts have been obtained in a day from one mould: this is quite novel. All the exhibits, too, are shown just as they came out of the mould. Then there is fibrous and fireproof plastering. Some handsome medallions show that fibrous plastering lends itself readily and effectively for ornament. The little sanctum at the stand shows walls composed of fibrous slabs, by use of which dirt as well as laths is dispensed with. Cornices and enrichments are another feature of work in this material just taken up by the firm. The material used as fireproof plastering is waterproof and fireproof, patented during the last few weeks. A part of iron column and girder encased with the patent is shown. A dark core or basis takes a white finishing surface, and what is quite novel and has not been done before is, that both are at once cast together as one piece. Ironwork thus encased acquires an enormous strength. The metallic flooring is made for every purpose, for street pavements, stables, car and engine-sheds, railway platforms, malshouses, granaries, fireproof floors, warehouses, tennis courts, &c. There are specimens of the paving for the Old London Street for the Inventions Exhibition, also for cavalry stables for the War Office, &c., and many samples of staircases that have been laid in various establishments—for example, at the Oxford and Cambridge Mansions, artisans' dwellings, also for Messrs. G. Rowney & Co., Euston Road, &c. Among the names of various architects who have used them may be mentioned Messrs. Davis & Emanuel, Messrs. Ebbetts & Cobb, &c.

The staircases are in red and in grey, smooth and also grooved treads. The work, it will be seen, shows both treads and risers are of the concrete. Space will not, however, allow of more, and enough has been said to point out the wide range covered by the productions of the firm.

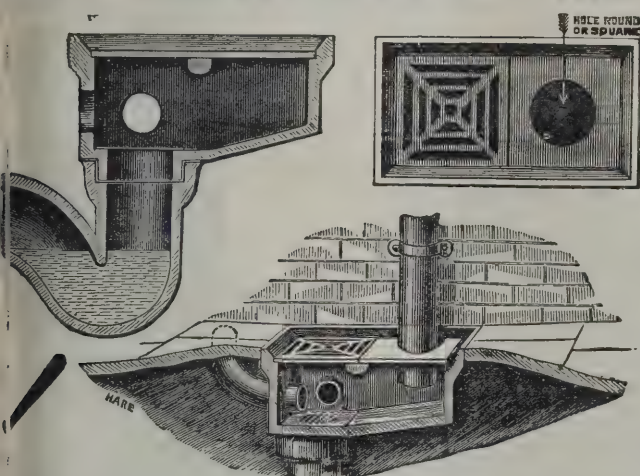
*E. PLOWMAN.*

MR. E. PLOWMAN, brick and tile manufacturer, Lower Gravenhurst, near Amptill, Beds, shows some capital building materials, a speciality of his being the very hard gault bricks and buff facings. There are red gaults for paving purposes, which produce a pavement of exceeding durability as well as affording a good foothold. No fear of slipping on them as on some tile floors. An inspection of the gaults varying in colour, in white, buff, red, &c., is sufficient almost of itself to speak to their general excellence. There are ridges, crestings, copings, plain tiles, and pantiles the cheapest yet made for agricultural purposes; also agricultural drain-pipes. Bricks are seen also perforated, which of course would be a saving of freight where large quantities are conveyed. The bricks may be used anywhere, for, wherever put, weather will not affect them. The bricks have been tested at Messrs. Kirkcaldy & Son's Brick Testing and Experimenting Works, Southwark, with the result that a single brick resisted a pressure of 40 tons, and a square foot a pressure of 158 tons. They were also used for the new bridge at Bedford, the facing bricks for the bridge and also for the grammar school having been supplied by Mr. Plowman.

*Alfred Putney.*

MR. ALFRED PUTNEY, Baltic Wharf, Harrow Road, W., shows his patent "Pavodilos" solid wood flooring. Under the name "Pavodilos" Mr. Putney has registered his patent lock-joint flooring, floor borders, panel, dado, and V-jointed boards. The beautiful work Mr. Putney shows at the hall has been subject of remark. Of late years many persons have recognised the multitude of evils in the old-fashioned floor so long concealed and abetted by carpets, and have tried to remedy matters by discarding

## BELLMAN'S PATENT GULLY.



*This Gully possesses the following advantages:—*

**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.**

**Avoids all Splashing.**

**Ventilates the Pipes and Trap.**

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**Is easy of Access for Clearance.**

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*The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.*

DESCRIPTIVE CIRCULAR ON APPLICATION.

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carpets, and putting down a second or veneer floor called parquet. The Pavodilos solid wood flooring is specially designed to remedy the disadvantages of the ordinary nailed floor, and to obviate the necessity for a double or veneered floor. These ends the Pavodilos flooring is designed to secure most completely and economically. By an ingenious mode of interlocking throughout the sides of each board, a perfectly smooth, air-tight, and dust-proof surface is obtained, free from nail-holes and indentations. By the lock-joint arrangement, various coloured fancy woods may be used for producing borders or patterns at will, most pretty and artistic results being obtained by this means. In point of cost, durability, and solidity the system certainly recommends itself, and any one who looks at the work exhibited, cannot fail to see what very ornamental work, characterised by great good taste, is attained by a process of simplicity marked by much ingenuity. The ornamental effect to be produced will depend on the amount of taste brought into play in properly selecting and arranging various woods for pattern or border. The different woods are to hand. Passed through a machine they are all of one thickness, and work in flush together. Variety of colour and blocks or slips of varied widths and dimensions enable a person by judicious choice to produce an effective design equal to parquetry-work. The combinations that may be made are endless; happy contrast is the point to be studied. The inexpensive character of the work, far from being objectionable, is just what the bulk of people, however deep their purse may be, as a rule regard as a merit. The floors shown and borders are quite sufficient to denote that the process has a future before it. The section of a board on inspection will show the means by which the lock-joint is effected. On one side is a tongue and angle above; on the other side is a groove to receive the tongue, and a shoulder to fit in angle. The upper surface of the tongue is on the incline, so as to increase the strength of the tongue and give greater accessibility for driving in pins, nails, or screws, the groove and shoulder fitting over and hiding the nails. The angular set of the upper part of

the board clenches the shoulder and prevents rising or warping, and thus insures a perfectly even surface and a perfectly air-tight and dust-proof joint, the whole forming a solid flooring of unusual durability, three times as durable as a veneered floor. Moreover, it can be taken up and relaid without injury, or a board can by a simple arrangement be lifted and relaid without cutting in case of need.

*M. C. Duffy & Son.*

Messrs. DUFFY, of 66 Stork's Road, S.E., show a large variety of builders' turnery goods, including balusters, newels, hand-rails, table-legs, as well as some specimens of their wood-block flooring and wood paving, suitable for schools, churches, &c. Hack-covers, hack, lorry, pallet-boards, and strikes.

*Joseph Westwood.*

Mr. JOSEPH WESTWOOD, jun., Napier Yard, Millwall, E., shows many and varied applications of Hawksley's patent treads, which are so well known in practice, and which combine, as nothing else does, the qualities which have secured their reputation. Go where one may, they will be found in use all over London and throughout the United Kingdom—in railway stations, barracks, post-offices, hospitals, schools, public and private buildings, hotels, warehouses, offices, &c. Any person may see how they stand wear and tear in the stairs of the Metropolitan District Railway, to quote one example; and it may also be noted that sample steps, placed in the centre staircase of Dalston railway station, and with a traffic exceeding 6,000 passengers each day, or a total of more than 6,570,000 persons in three years, did not wear down from their original surface more than one-sixteenth of an inch. A specimen shown of the floor laid at the Corn Exchange, Mark Lane, with the enormous traffic there, is yet another proof of its wonderful durability. The latest adaptations show the system applied to hydrant covers and trolley wheels, also to steps from house to garden or conservatory. This trolley wheel will outlast many iron wheels, besides which it is noiseless, does not cut up floors, and can be

worked more easily by a lad than the mere iron wheel can be by a full-grown man. The patent treads are also applied to stairs and ladders, and also for stables, in which they afford a clean and warm bed-place for horses, being easily cleaned, and liquid draining off naturally to gutter.

*"Electric" Paint Remover Co.*

The "ELECTRIC" PAINT REMOVER CO. (Limited), 3 Westminster Chambers, Victoria Street, London, S.W., bring under notice their "Electric" Paint Remover (formerly manufactured by Rendle Bros. and the Alliance Manufacturing Co.), which has obtained an excellent name for the rapid and efficient manner in which it does its work. It has completely superseded all the old and laborious methods of pickling, scraping, and burning off. Although it has only been in the market a few years we are informed that it has been universally adopted by painters, decorators, builders, contractors, and most of the leading railway, steamship, omnibus, and other companies have successfully utilised it for different purposes. America and the colonies have used large quantities of the "Electric" Paint Remover, as it is a great labour-saving material, and yet so economical in its action. Paint, varnish, tar, grease, &c., vanish like magic from wood, stone, iron, marble, &c., before the action of the Remover, and yet it has not the slightest injurious effect on the last-mentioned material, neither is there to be found any trace of lime or other injurious compound in the paste itself, which is of a creamy consistency, and without the slightest offensive smell. Owing to the chemicals being now manufactured in such large quantities, and through improvements in the machinery, they have now greatly reduced the price of the "Electric" Paint Remover.

*Martin & Co.*

A capital array of carvings suitable for interior and exterior decoration will be found at the stand of Messrs. MARTIN & Co., of 27 Newman Street, W., consisting of cornices, dados, panels, chair-rails, doors, mantels, skirtings, &c.

## THE WEST CENTRAL SANITARY ENGINEERING CO.,

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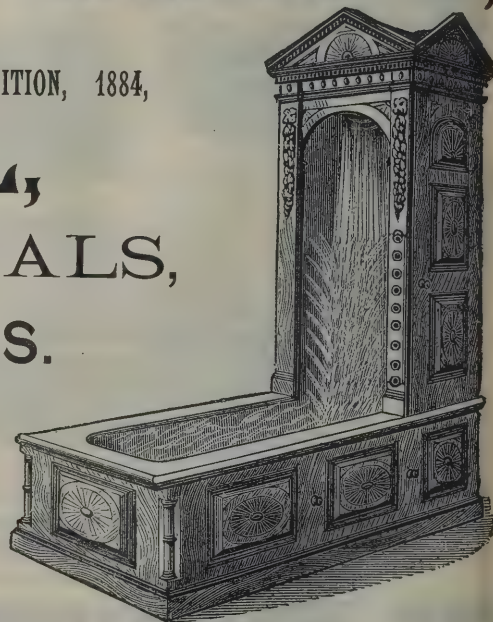
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*S. Ransom.*

Mr. S. RANSOM, Epoch Saw Mills, Kensal Road, Westbourne Park, makes show of exceedingly good work, notwithstanding that the original exhibits intended to be shown were all burnt in the fire that cleared out his premises on the 8th inst. All the articles exhibited are ordinary designs, such as could be brought together at short notice. Mr. Ransom has taken temporary premises, so that business is going on as usual, and he is in a position to complete present contracts and execute future orders. A portion of an old carved staircase, designed by Sir Christopher Wren, and erected about 1670, is shown. It is taken from Kennan's Hotel, Cheapside, which is to be rebuilt, Mr. Ransom having the order for the staircase. Specimens showing handsome wood-work put up at Ennismore Gardens are shown, portion of landing with carved fascia, Corinthian newels, rail, &c., and other good work in character. Among staircase details will be noticed the handrail scrolls and wreaths, variously-designed newels, Queen Anne included. The newels are all hollow-cored, which, besides preventing the wood splitting, is convenient for the introduction of a gas-pipe.

*Houghton, Brown & Bros.*

Messrs. HOUGHTON, BROWN & BROS., Kingsbury Ironworks, Ballspond, N., have at the hall an 8 horse-power portable engine, and two 4 horse-power semi-portable engines, a 6-foot "A1" mortar-mill, circular saw benches, the same also with rise and fall spindle, and a combined patent circular and band sawing machine, an improved moulding machine, band-saw machine, patent friction barrow-hoist, a mortising and boring machine, and saw-sharpening machine. The two 4 horse-power engines are most handy as well as handsome engines. The boilers are felted and cased in mahogany. The engines are constructed all of the best materials, with first-class workmanship equal in finish to the best locomotive work. An improved vertical moulding machine should be noticed, being particularly adapted for irregular mouldings, besides straight mouldings and other

work, as the action is reversible. The reversing motions are obtained by an ingenious arrangement in the counter-shaft, entirely dispensing with the objectionable use of friction or gear wheels. All the machinery of the firm is noted for good workmanship, and whatever the purpose of the particular machine sawing, mortising, and boring and the like, steadiness in working, absence of vibration, &c., is secured. The wood-working machinery manufactured by this firm is devised to fulfil a great variety of purposes. They are known also for their improved mortar mills, mortar-mixing machines amongst other articles on their list that applies to building matters, and their productions have received the approbation of the home and Indian Governments as well as of foreign Governments.

*The Willesden Waterproof Paper Company*

Have an exhibit illustrating the waterproof character of their Willesden paper, and some of the many purposes to which it can be applied, including a water-wheel and launder, a roof, a tank, &c., &c.

*William Johnson.*

Mr. WILLIAM JOHNSON, Cardigan Works, Leeds, shows his new patent brickmaking machine for plastic or semiplastic brickmaking, as also the new patent lever brick-pressing machine, the two machines being designed to work in conjunction with each other, and to turn out 10,000 best finished fronting bricks per day, with three boys, at a cost of 5d. per 1,000. The press can be made for pressing hand-made bricks or bricks made by any other brickmaking machine, and may be used for work of the finest kind. The special points aimed at in the construction of the machinery are to secure simplicity, strength, and absence of friction, with consequent increase of power, regularity of working, economy of labour and wear and tear, and the production of a superior quality of brick. When in use the clay is received direct into a hopper, in which works a plain ram heated by steam. The moulds are formed in a revolving cylinder, and are fed by the ram, the action of which feeding propels the brick from

the mould diametrically opposite on to a table. By a simple arrangement the hopper is kept in constant agitation, which insures regularity of feed and a perfect quality of brick by regulation of pressure on the brick. In the brick-pressing and briquette machine, pressure is given by a powerful lever at  $2\frac{1}{2}$  to 1, with a minimum of loss by friction, the whole power by gearing and lever being brought directly on the substance pressed. The motions for feeding and delivery of the brick are direct and firm in action, and are regulated in a simple manner, so that there is no varying, being only affected by wear and tear, which is provided for. This machine may be had also in a form not only adapted for brick-pressing, but as designed more especially for briquette-pressing, by providing more powerful leverage.

*Engert & Rolfe.*

Messrs. ENGERT & ROLFE, Felt Works, Barchester Street, Poplar New Town, E., have brick-work set in a cistern of water, to show the mode of application and the efficacy of fibrous asphalt as an anti-damp course in walls. Rolls of the various felts manufactured by the firm can also be inspected at their stand, viz., asphalted roof felt and felt for lining roofs, including bituminous or inodorous felt, sarking felt, hair felt for boilers, &c. Messrs. Engert & Rolfe are contractors to our own and to several foreign Governments, and the name of the firm is, one may say, long since a household word.

Among other exhibits yet to be noticed, and which will be described next week, are those of Mr. JOHN MATTHEWS, Weston-super-Mare; Messrs. MEAKIN & CO., Baker Street, W.; Messrs. J. T. PENNYCOOK & CO., Ironmonger Row, E.C.; Mr. J. F. EBNER, Clerkenwell Road; Mr. JOHN SMEATON, Ludgate Circus; THE DUNTON GREEN RED BRICK WORKS; Messrs. ARCHIBALD SMITH & STEVENS, Leicester Square; Messrs. WILLIAMS & NASH, Castle Street, Holborn; Messrs. T. WILSON & CO., Stowmarket; Mr. G. A. WRIGHT, Westminster Chambers, &c.

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The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with "**JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN**" 5 feet over, with  $1\frac{1}{2}$  inch down pipe, ten apples (averaging  $1\frac{1}{4}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the **ten apples, the sponge, and the four pieces of paper**, no traces of the soil remaining visible upon any part of the apparatus.

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# The Architect.

## THE WEEK.

MESSRS. LEEMING & LEEMING have completed their matured designs for the new Admiralty and War Offices. We have been permitted by Her Majesty's Office of Works to reproduce the views. But as any publication on a small scale so as to fill a double page is likely to make people form an erroneous notion of the designs, and therefore will not serve either the architects or the public, we think it better to wait until next week, when, without sacrificing men's work in a scramble, we can give plates that will be uniform in size and quality with those representing the nine premiated designs which we published last year, and which were considered satisfactory by the profession.

THE following letter has been written by Mr. HERKOMER, A.R.A., to the secretary of Messrs. WILLIAM COOKE & Co., Limited, Tinsley, Sheffield, in reference to the announcement that the workmen offered to work for nothing during a week to assist the firm:—"As an artist who watches with the keenest interest the lives of workmen, I trust I may be permitted to offer my admiration for the noble act your workmen have decided upon—to help their masters out of a great crisis. Such an act belongs to the world, and ought to be historical. If followed up now it is sure to bring the best of times and lift the gloom that hangs over everything. These are traits to which we must look for future safety rather than to Governments. A sacrifice by a workman must bring gratitude from the master, and a master's gratitude is worth striving for. I trust I may be permitted to have my admiration conveyed to your workmen, for in a small way the men who are working for me in wood carving and in wrought iron-work are closely bound up with my own life. Their sorrows are mine, and my joys are theirs." The secretary in reply says that the praise received from artists and writers has been gratifying to the men.

THE utility of statues which are displeasing is not apparent, and if a few of them were destroyed, who knows what a beneficial effect might be produced in sculpture? It was proposed on Tuesday in Birmingham that the statue of the late GEORGE DAWSON, by Mr. WOOLNER, R.A., should be broken up, if permission could be obtained from the corporation. The executive committee appointed by the subscribers had reported that the best place for it was at Mr. Dawson's grave in the general cemetery. But it was said that there would be desecration in having a figure of the kind in that place. One gentleman, it appears, offered ten guineas for the statue in order that he might conceal it from the public. Eventually a suggestion was adopted to place the figure in the Free Library.

MR. PEDDIE's long-expected Bill for the Disestablishment of the Church of Scotland has at last been printed. If passed it will come into operation on January 1, 1887. It proposes the formation of a body to be known as "The Commissioners of Church Temporalities in Scotland," in whom all churches, manses, and ecclesiastical buildings are to be vested, and after Whitsunday 1877 the congregations and ministers are to be their tenants. There is to be no obligation or liability on the part of any person, body of persons, corporation or municipality, to maintain or uphold the fabric of any manse, church, or ecclesiastical building; and no rate or assessment is to be levied or made for the building, rebuilding, or repair of churches or manses, or for providing or enlarging any glebe, or the providing of communion elements; except in cases where, prior to the passing of the Act, an assessment has been made for the building or repair of any church or manse, and the works have been begun or the contracts for the same have been entered into, when it shall be lawful to levy such assessment. The Commissioners are to have the management of the churches or ecclesiastical buildings or structures, and manses and glebes which form part of the property, vested in them, and shall have power to lease, sell, or feu the same, either by public auction or private bargain, but only

for a fair and adequate price or consideration in money or in money's worth; they are to give the preference to offers by or on behalf of the congregation previously using the churches or ecclesiastical buildings or structures, or whose ministers previously were entitled to the possession of the manses or glebes, provided a fair and adequate consideration shall be offered. The money is to be invested in such a way as the Treasury may determine. All churches or ecclesiastical buildings, or structures in burghs which are the property of the corporations, including the parish churches in Paisley, are to be under the exclusive management of the magistrates and town councils of such burghs, any existing law or custom to the contrary notwithstanding; and they shall have power to lease or dispose of the property under similar conditions to the Commissioners.

THE syndicate principle is about to be tried in art. The first experiment will be made in Edinburgh. It is proposed to form a fund by means of annual subscriptions, with which to purchase works of art. They will be distributed by annual ballot. The principle resembles that of the Art Union, but we suppose there will be more liberty of action on the part of the committee.

WHEN it was proposed to erect four equestrian statues on Blackfriars Bridge, we pointed out the difficulty of a selection, and the report of the Bridge House Committee confirms what was then said. Twelve subjects were proposed, viz., *Alfred the Great, Harold, Richard I., Edward I., Edward III., The Black Prince, Henry V., Cromwell, St. George of England, St. Andrew of Scotland, St. Patrick of Ireland, and St. David of Wales.* The combination is almost as odd as the description given by the showman when he announced that he had figures of their Majesties *The Czar of Russia, The Sultan of Turkey, and The Isthmus of Panama.* When the committee were at work on legendary lore, they might as well have included the entire Seven Champions of Christendom. The big group has been broken up into three in order that the Council who pay the money may have their choice. No. 1 group is made up of *Richard I., Edward III., The Black Prince, and Henry V.* No. 2 group consists of *Alfred the Great, Harold, The Black Prince,* and as the difficulty of the Westminster Commission about having a statue of *Cromwell* was remembered, the Council can have *Edward III. or Henry V. instead of The Protector.* The four saints form the third group. One of the Irish bishops lately complained of the morose countenance which was given to the patron saint when he was figured in prints, but what will he say when he reads that *St. Patrick* is shown careering on a prancing steed? The proposal to put up an equestrian statue in honour of little TOMMY MOORE, the songster, was proxy in comparison. We suppose the saints are to have the fine florid looks of *Gog and Magog* in the Guildhall, the two statues which, to the aldermanic mind, are finer than the Parthenon marbles. Life in the City is stern enough; and probably the Council thought that four such figures would excite a laugh even in the wayfarers; but their good intentions are not likely to be carried out, for the report has been sent back to be again considered.

A RETURN has been published this week which shows that the gross rental of Glasgow, including railways and canals, &c., as shown by the valuation roll, is 3,406,370*l.*; last year it was 3,432,114*l.* The decrease is thus 25,744*l.* The gross rental of dwelling-houses within the city is 1,310,732*l.*; last year it was 1,309,921*l.*, showing an increase of 811*l.* The gross number of dwelling-houses for the current year is 119,554; last year it was 119,648, a decrease of 94. The number of unoccupied houses this year is 6,187; last year it was 7,124, a decrease of 1,937. The gross rental of premises other than dwelling-houses, including railways and canals, &c., for the current year is 2,095,638*l.*; last year it was 2,122,193*l.*, a decrease of 26,555*l.* The gross number of these premises for this year is 25,384; last year it was 25,432, a decrease of 48. The number of this class unoccupied this year is 3,888; last year it was 4,276, a decrease of 388. These figures show that as the unoccupied houses become fewer, the number of unoccupied shops, &c., is reduced very much in the same proportion.



## HONOUR TO REJECTED PICTURES.

THE Paris journalists of late years have turned their influence to account by organising exhibitions and entertainments in order to give assistance to various benevolent institutions. They now intend to hold an exhibition of works by painters who are recognised as masters, but which have been from time to time rejected by the Salon judges. As they propose to go back to the beginning of the century, it is needless to say there will be no difficulty in finding works of the kind that would be sufficient to cover the wall space of several galleries. Apart from the interest that will belong to the works if considered individually, and from the circumstance that what was meant to be a reproach has become a mark of merit, the collection is likely to be more truly illustrative of the history of French art than if it had been one of the so-called representative exhibitions. In the majority of cases the pictures which were rejected attained that distinction because they were in advance of the laws of the judges. The pictures will exemplify the struggle for freedom in France, by which artists all over the world have been the gainers. If, at the present time, the Salon juries are willing to recognise individuality, if in exhibitions elsewhere there has been a relaxing of pedantic rules, the revolution was brought about by the sufferings of French artists, and the pictures in the forthcoming exhibition will, from younger artists at least, obtain the reverence that belongs to relics of an age of persecution.

It is not to be supposed that the limitation to the present century was caused by the difficulty of obtaining works of an earlier time, but simply from the fact that the practice of rejection was systematised by a clique of Academicians in the beginning of the century, and more particularly by DAVID, the painter, who at that time was, in his way, as great an autocrat as NAPOLEON himself. Almost every year one hears of revolutionary schemes for the extirpation of Salon juries, which are at once ascribed to the rage of men whose works are unworthy of admission to the exhibition. But, whatever may be said against them, they can be defended on the ground that they are in accordance with the original arrangements, for, strange as it may seem, the juries do not date from the foundation of the exhibitions.

Like many other powerful institutions, the Salon exhibitions have had a very simple beginning. In the regulations of the Academy that was founded by painters and sculptors, which were sanctioned in 1663, it was prescribed that all the officers and Academicians should bring an example of their work to help in decorating the place of meeting. It is evident that the public were permitted to enter the rooms in the Palais Brion, for it is recorded that in 1667 the porter was allowed a gratuity of fifteen livres for his trouble during the fortnight of the exhibition. The works sent by the students in the Academy at Rome were shown in 1669, and the other students were encouraged to express an opinion on them. The collection soon became too large for the rooms, and two years afterwards the exhibition was held in an open court. There was so little advantage arising to the Academicians from such modest shows that they grew remiss in sending works, and there was great difficulty in obtaining pictures to hang on the walls. Then came the wars of LOUIS XIV., the religious dissensions and persecution of reformers, and the exhibitions were closed.

Through the influence of MANSARD the Academicians obtained a local habitation in the Louvre, where they opened an exhibition in 1699. As the gallery was adorned with great magnificence for the visits of the King, it was called the Salon, a title which, in spite of all the transformations France has undergone, is still retained by the exhibition. The exhibitions were not held at regular intervals. It is known that one was held in 1725, when a prize of 5,000 frs. was offered to the authors of the two best pictures. As is customary, there was great dissatisfaction with the verdict. The Academicians who were not competitors selected LEMOINE'S *Contenance of Scipio* and DETROY'S *Return of Diana*. But the public preferred a picture by COYPEL, and the Academy was supposed to have displayed favouritism. For nine years afterwards there was no exhibition. Another attempt was made to revive them in 1737, when the Salon Carré, where the gems of so many

schools are now collected was assigned to the Academy. There the exhibitions were held during many years.

For about ten years they were annual, but the public complained of the quality and the number of the works, which amounted to about two hundred on an average. The grievance was brought before the King, and a new arrangement was adopted. His Majesty considered that one hundred and fifty good pictures were enough for a gallery, and it was ordered that the Academicians should on August 17 (eight days before the opening on the feast of St. LOUIS) deposit their works in the gallery called after APOLLO, and that on the next day a jury was to be nominated, by whom all the works were to be examined impartially, and those among them which were considered unworthy of the public gaze were to be eliminated. This was the beginning of the jury system, which was unknown for more than half a century. It was not a success, for, in spite of the preliminary investigation, the quality of the pictures was not advanced, and in 1751 yearly exhibitions had to be given up, and for forty years they were biennial.

The hanging was a difficulty then as now. At one time it was undertaken by a conservator of the King's pictures, who managed to escape to Versailles before the exhibition was opened. A painter was associated with him in the hope that more care might be exercised, but without much advantage. It was decided that the Academicians should undertake the office in turn. This arrangement did not succeed. The next experiment was to make the pictures take the best and worst places in turn. The visitors were horrified when some of the pictures were put on a level with their eyes, and good and bad works were confounded. The sculptors were harder to please than the painters. Every exhibition gave opportunity to the pamphleteers, who were sure to have the aid of the artists who were jealous of the Academicians in pointing out the shortcomings of the pictures and statues. As the exhibitions were always free, there was no lack of critics, for, to the credit of the old French Academicians, it must be said that they were not mercenary. They even scorned to take the profit that was derived from the sale of the catalogues, and it was handed over to the servants until COCHIN, who was wealthy, sought the amount for himself in his quality of editor, when MARIGNY, who, as director-general of buildings, had the control of such things, decided that the profits should go to the funds of the Academy.

The Salon exhibitions were, as we have seen, entirely academical affairs; but the Revolution broke down the barriers, and it was decreed that there was to be no longer a privileged occupation of the Louvre galleries. Every artist—a stranger equally with a Frenchman—became entitled to claim admission for his work. There was a sort of dramatic generosity about the announcement which was in keeping with the time. In 1789 there were 350 works exhibited; after the decree the number rose to 794, and the Academicians feared to reject more than two. The Academy of Painting and Sculpture, in common with many societies, was suppressed by the Convention in 1793, and a Commune Générale of the Arts took its place. France was fighting for existence against hordes of enemies within and without its frontiers, but artists found time to work. The first exhibition of the Commune contained no less than 628 pictures, 182 pieces of sculpture, and 24 architectural designs. Among the pictures were three which had been commissioned by the Convention, the subjects being taken from ancient history.

The Convention soon found that generosity must succumb to space. There was a limited area in the galleries, and more pictures than could be hung on it. A Committee of Selection was inevitable, and, like all the tribunals of that time, it was made up of incongruous elements. Not only artists, but writers, scholars, actors, gardeners, shoemakers, soldiers, and attorneys were made judges of the pictures. They looked for principles rather than for art, and, with a consistency that must ever delight the creators of new styles in painting, it was suggested that the prizes should be awarded amongst the men whose works had to be rejected, for, by ignoring antiquated formulas, they displayed the republican spirit in the greatest strength. The chaos could not continue long. It was found that the artists and the laymen were at cross purposes about the bestowal of medals—a kind of honour that was unknown to



the Academicians in the days of the Monarchy—and eventually the Minister found that he had the sole responsibility of the Salon exhibitions on his hands along with many much more important affairs. It is not surprising that, under the circumstances, PIERRE BENÉZECH wished to have longer periods between the exhibitions. He found to his cost that he could not dispense with a jury of some kind, unless he was ready to take the blame on his shoulders at a time when blame might be fatal. Examination was again adopted in 1798, and an appeal was made to artists that they should submit only the best of their works.

With the advent of BUONAPARTE there was no longer a question of jury or no jury. Whatever might be the nominal judgment-seat, the entire power was in the hands of DAVID, who, during Consulate and Empire was the lawgiver on French art. He was an opponent of the King's Academy of Painting and Sculpture, and may have thought that the jury system was no more than a relic of an abuse which he had tried to suppress. The effort to reproduce the republicanism of BRUTUS and the antique Romans was found to be a delusion; but DAVID believed that what was impracticable in politics could be done in art. The antique was forced on painters in spite of themselves. The Restoration brought a nominal freedom, for DAVID's spirit was still supreme. The juries were drawn from the Institute of Fine Arts, and they descended among artists with the coldness of the antique gods. They were assured of their Olympian seats, and it mattered little how often men might break their hearts in raging against them. DAVID told a story of the refusal of the Academicians to admit an able painter on the ground that he might disturb their equilibrium, and for years after the Restoration many an artist was sacrificed in the effort to preserve equilibrium. Pictures were kept out of the Salon because of their originality, and at length the painters who belonged to the section of painting and were judges became so indifferent that they left the selection to architects. The bad system continued down to 1848, and among the men who have suffered because they were endowed with genius, were such artists as GERICAULT, DELACROIX, MEISSONIER, THEODORE ROUSSEAU, JULES DUPRÉ, COROT, JEAN GIGOUX, and DAUBIGNY. If there was a likelihood that the visitors might say on looking at a picture, "That is by a new man," the painter was doomed to exclusion.

The Revolution of 1848 gave a chance to the artists of seeking judges who were inspired by modern ideas. The Government of that time tried to follow in the footsteps of the first Revolutionists, and opened an unrestricted Salon. It was not a hopeful exhibition. A jury which was formed of officials and artists was afterwards tried, but it was ineffectual, and in 1857 the selection was once more entrusted to members of the Institute. But it seemed impossible to extirpate the traditions of that body, and artists had to pay the penalty if they disliked stereotyped rules. As the Imperial Government grew weak concessions were offered in all departments, and the artists were permitted to elect a large proportion of the juries. Mixed commissions are, however, rarely workable, and the difference in opinions between the representatives of the artists and of tradition brought no advantage to the exhibitors. "I prefer," wrote M. ZOLA, "the good old Academy, with all its faults. With it there were no surprises; it was constant in hate and friendship. Now there is no knowing where one is. If I were a necessitous painter I should try and discover who were to be my judges, and paint to suit their taste."

Happily there is less need nowadays for an artist to think of the jury than of his own ideas. A Salon exhibition is no longer illustrative of one system of painting. Variety is visible throughout the galleries, and if a work is rejected it is not for displaying signs of ability. The yearly exhibitions of rejected works do not secure much sympathy with the painters, inasmuch as the majority of the works are remarkable mainly for their pretension. The proposed exhibition of the rejected pictures of past years may convince artists and the public that, whatever may be the shortcomings of the present authorities, they are far more liberal-minded than their predecessors.

**Professor Baldwin Brown** is to deliver a course of twenty lectures in the Edinburgh University, on "Architecture and Art in the Bible."

## A PROJECT FOR A MILITARY HOSPITAL.

WE drew the attention of our readers some time ago to the plan of a hospital which had been devised by Mr. JOHN MARSHALL, who is known equally by his skill as a surgeon and as a professor of anatomy. The peculiarity of it was the adoption of a circular form, which presents many advantages for effective organisation. When reviewing the book on "Hospitals," by Mr. SAXON SNELL and Professor DE CHAUMONT, we noticed some plans which had been prepared on similar lines. A design has been worked out in detail by Sir ANDREW CLARKE, R.E., assisted by Mr. INGRESS BELL, for "A projected military hospital designed for a particular site in a hot climate," which is now under the consideration of the War Office. It is illustrated by a set of careful and tasteful drawings, as well as a most elaborate model. Until the authorities shall have decided on its adoption we are not informed as to the particular place where it is to be erected. It will suffice to say that its peculiar arrangements have been made with a view to a place where the heat in summer is very great both day and night.

The history of the improvements in hospital building is a progress from unity to division, for in the war against disease the military maxim, *divide et impera*, has been proved to hold good. In the Ospedale del Santo Spirito, built by the Popes in the neighbourhood of St. Peter's and the Vatican, we have one single large hall, of the proportions of our own Westminster Hall, to receive under its roof every variety of disease and bodily suffering, from smallpox to a broken leg. Slightly different are those like the London Hospital, where in one great block of building wards are piled up many storeys high, with slight divisions between the wards—a system which, although one step towards division, is really worse than that adopted in the well-ventilated, lofty hall of Santo Spirito. The Hôpital de la Riboissière in Paris, and its copy, the St. Thomas's Hospital on the Embankment, are decided attempts towards the division of the wards. The hospital is divided in isolated pavilions, connected only by an open loggia, but each pavilion is still composed of many floors. Perhaps this is the uttermost limit of isolation we can reach in planning hospitals for crowded cities on very valuable land. But the Germans have gone still further, in doing away with all the upper storeys of each pavilion, and also with the connecting loggia. Major-General Sir ANDREW CLARKE, having an ample extent of land at disposal, has adopted the German arrangement, but has improved upon it by making each pavilion circular on plan, by which the following advantages are secured:—

1. The circle encloses a larger area and cube than any figure of equal perimeter, and therefore will, with a given length of walling, accommodate the greatest number of patients.
2. The circular form allows the whole length of the enclosing wall to be allotted to beds, saving only the actual door-openings. In rectangular wards the two longer sides only are capable of such appropriation.
3. It disposes of the question of aspecting the wards, which can be placed in any convenient position on the site.
4. It admits more light and air between the wards themselves, and thus conduces to the better ventilation of the whole site.
5. It assists in the general movement of the external air (an important matter especially in hot climates) by deflecting the currents of air which impinge upon its cylindrical surface, and it has no re-entering angles for the stagnation of the air.
6. The full diameter of the ward may be exposed to, or defended from, any desirable or undesirable quarter of the compass, as the varying circumstances of the season or hour may dictate.
7. The circular form allows of easy and perfect ventilation, the fresh air being admitted from points along its whole circumference, and, after vitiation, being attracted by artificial means equally to the central upcast shaft—in direct lines, without liability to traverse laterally the beds of neighbouring patients.
8. The circular form is in short the logical result of attempts which have from time to time been made to improve the sanitary condition of wards of the ordinary construction by rounding off their internal angles. By degrees the quadrants have been struck with ever-increasing radii, and this proceeding strengthens the view that the ultimate solution of the problem lies in the adoption of the circular form.

On account of the particular climate of the place where



this hospital will be erected, there are some special features which unite both utility and beauty, such as a large open verandah, supported by well-proportioned arcades, which surround and protect the outer wall of each ward against the sun, as well as affords a sheltered ambulatory to wheel out the patients in fine weather. Still more characteristic is the open arcading which protects the roof itself of the wards against the direct rays of the sun—an expedient adopted by the ancient Egyptians. All the buildings are to be carried out in stone, which is so cheap in the neighbourhood that ashlar costs far less than ordinary English brickwork. The elevations are simple Classic arcades, which exhibit both in their details and general proportions great refinement, and are creditable to the designers. The severity of the style is brightened by the insertion of slabs of Sicilian marble pierced with the involved geometrical designs dear to Oriental architects, in place of windows and ventilators.

We may have another opportunity of describing the arrangements in detail, and perhaps of giving fac-similes of some of the drawings. Meanwhile we refer to it as an example of an endeavour to combine the most scientific planning of a hospital with appropriate and artistic treatment of its architecture. Major-General Sir ANDREW CLARKE, R.E., A.I.C.E., has been assisted in this project by Mr. INGRESS BELL, and shares with him the credit of the result.

### TESSERÆ.

#### A Model Art School.

WILLIAM BURGESS, A.R.A.

WHAT is really wanted is a series of schools in town and country where the student, after a very few preliminary exercises, should be taught the figure, and properly instructed in it by a competent staff of masters who have been trained to teach it, who know their anatomy, and who, if required, could point out the differences between a Roman and a Greek statue. Of course I do not imply that students should go at once to the life; on the contrary, they should go through a proper course of drawing from the flat and the round in the first instance, and the art of stippling might be omitted with advantage. When a man can draw the figure, ornament becomes very easy. Certain days might be set aside for it, and certain lectures from a proper text-book (say a special edition of Owen Jones's "Grammar of Ornament") would be given at certain intervals, with the lecturer's own observations. Such schools would be attended not by workmen only—on the contrary, architects, sculptors, painters, and the students in all the cognate arts would be only too glad to obtain in them their first instruction in the figure. We should see decorators making a study, not how to avoid the figure in their designs, but how to introduce it.

#### Palladio as an Architect.

PROFESSOR DONALDSON.

The genius of Palladio does not appear to have been calculated for domestic architecture. He has rarely seemed to feel the difference which exists between private edifices and public buildings. In the elevations of his houses the large gigantic orders create unpleasant effects, sometimes extending up the whole façade in colossal proportions, at others standing on a lofty basement, and not unfrequently raised on projecting unconnected pedestals, as though hoisted on stilts. On the other hand, the public edifices of Palladio, when unrestrained by the caprice of his employers or the habits of his contemporaries, take the first place among modern productions. The Redentore and the Convento della Carità at Venice, and the Olympic Theatre and Basilica at Vicenza, announce a man of enlarged ideas, master of ancient usages, capable of appreciating and producing the sublime, and alive to the effect of every minute detail. By his writings, as well as by his buildings, Andrea has influenced more than any other master the style of architecture since his period; and, as a style, the productions of the Palladian school can be considered as inferior only to the magical works of the ancients.

#### A Theory of the Entasis.

SIR R. RAWLINSON.

Hewn ashlar masonry, if set stone and stone, or with thin beds of mortar, and the face-work either backed up with rubble or with bricks, must be weak. Neither science nor care can make such hybrid work strong, nor preserve it true in line, on face, vertically or horizontally; the backing will shrink and "draw" the face-work. I have not seen the Parthenon, and cannot, therefore, pronounce positively as to the subtle curves said to exist in the upper lines of the walls; but from expe-

rience I am led to think these curves may be the result of "drawing" by the backing and by the weight of the roof combined. The main front of St. George's Hall, Liverpool, is straight at the ground line; at the cornice it curves inward, from angle to angle, regularly and truly, and in a most beautiful and, if you like, "subtle" curve, having a verted line of some four inches. The angles cannot shrink. The central portion of the wall, being most free, shrinks most, and the inward draw is evenly and regularly modified up to the angles. I do not believe a straight cornice-line can be found in any building of any length and height, unless there are numerous inner and cross walls to counteract the shrinking and binding actions named. The walls at St. George's Hall were set out true, they were carried up truly, the shrinking and inward bending took place subsequently. I noticed it, and understood the reason; and in building the attic walls or courts which were added soon after Mr. Elmes left England, I backed the faced ashlar with pillars of ashlar in equal courses of Runcorn stone.

#### English Portrait-painting in the Seventeenth Century.

S. REDGRAVE.

The English painter had chiefly found his market in portraiture. He gratified the affections or flattered the vanity of his patrons. He painted the popular alderman full-robed and wigged, who, strutting in stiff dignity, garnished the company's hall; or the well-fed college don, bearing upon his broad shoulders all the learning of his college; or he painted for the family mantelpiece, no matter with how little art, a cherished remembrance, a possession dearer to those who for a short time surrounded it than the finest work of the greatest master. But in portraiture the English painters could get no further than the face. Such was the limit even to Samuel Cooper's great talent, and to Richardson's art on canvas. They were truly styled *face-painters*, and the practice then was to employ *drapery-men*, usually foreigners, to do the rest. These men's work was almost stencilled; there was no variety of background, no characteristic action or even distinctive costume; hands were rarely attempted, but when introduced were all of the same stamp. The story of a sitter who insisted upon having his hat on his head, instead of under his arm according to rule, and found when the portrait came home that in addition to the hat he wore to order, the customary one under the arm was not omitted, will require no verification to those who are conversant with the portraits of the period.

#### Anatomy for Artists.

ROBERT KNOX, M.D.

There is but one school of art—Nature. But to read her volume profitably artists must study profoundly the antique Greek and ancient Italian school formed by the era of Leonardo, Angelo, and Raphael. It may precede or follow or coincide with the study of the living figure; still these immortal works must be your guide. For whether it be composition or colouring or design, you are likely to find that these masters read Nature more clearly than you ever can. But do not copy or imitate them farther than as objects of study. Learn anatomy by all means, but do not forget its object. When you draw a dissected limb be sure to sketch the living one beside it, that you may at once contrast them and note the differences. In drawing from the nude figure, contrast your sketch with the antique; you will find in it many defects. Never forget that perfection, the result of a high specialisation of Nature's law of individuality is rare; the opposite, that is, imperfection, the result of a tendency to unity of organisation, is by far the more common. You will be chiefly called on to draw the draped figure; see that you place your drapery not on a machine, but on a person of fine feeling. Fashion in dress is the trick of society, to substitute a conventionalism for beauty and fine forms; never sacrifice art at its shrine, but paint the person in what becomes him or her, regardless of the existing mode. The relation anatomy holds to art is to explain, first, how far the shapes and figures of the inward structures modify the external forms of man and woman; second, it informs the artist of the meaning of such forms; third, it explains to him the laws of deformation, that is, of variety in external forms; the causes of these varieties, and the tendency to which they lead. As an artist he must represent them, no doubt; but in doing so, let him wisely follow Nature rather in her intentions than her forthcomings, and return to the perfect or to its approximation, whenever time and circumstances permit him to do so.

#### Stone Columns.

EATON HODGKINSON.

As long columns always give way first at the ends, showing that part to be weakest, we might economise the material by making the areas of the ends greater than that of the middle, increasing the strength from the middle both ways towards the ends. If the areas of the ends be the areas of the middle, as the strength of a short column is to that of a long one, we should have for a column whose height was twenty-four times



the breadth, the areas of the ends and middle as 13,769 to 9,595 nearly. This, however, would make the ends somewhat too strong, since the weakness of the long columns arises from their flexure. Another mode of increasing the strength would be that of preventing flexure, by increasing the dimensions of the middle. From the experiments it would appear that the Grecian columns, which seldom had their length more than about ten times the diameter, were nearly of the form capable of bearing the greatest weight when their shafts were uniform, and that columns tapering from the bottom to the top were only capable of bearing weights due to the smallest part of their section, though the larger end may serve to prevent lateral thrusts. This latter remark applies, too, to the Egyptian columns, the strength of the column being only that of the smallest part of the section.

#### Granite.

PROFESSOR NEWBERRY.

Granite is now used for several and quite different purposes. By far the larger part is employed for heavy and coarse masonry, docks, bridges, and foundations, while in many instances the superstructure of public buildings, and of the palaces that commerce erects, is composed of this material. The qualities of granite which fit it for such purposes—its strength and durability—are so marked as to give it superiority over every other stone in use. Good granite will bear a crushing force of from fifteen to twenty-five thousand pounds to the square inch, and the better varieties are among the most enduring of all rocks. In this respect, however, granites differ much among themselves. The constituents of granite are quartz, feldspar, hornblende, and mica, minerals of which the chemical composition and physical characters are very unlike. Mica is soft and fissile, and hence is an element of weakness. Where it exists in any considerable quantity the stone is easily crushed and unfit for use. The feldspars of granite are usually orthoclase (potash feldspar) or albite (soda feldspar), and of these the former is the most durable, but even this sometimes decomposes by the removal of its alkali, falling into a powder (kaolin); and it is not uncommon to find granite deeply disintegrated over wide areas by this sort of decay, which Dolomieu calls *la maladie du granite*. The strongest and most durable element in granite is quartz, and, as a general rule, the resistance which the stone offers to violence and time will be measured by the proportion of quartz to the other elements. The hornblende of granite is a tough and durable mineral. When present in large quantity it gives weight and tenacity to the stone. The best evidence on the question of the quality of granite is afforded by its resistance to crushing force, which should be 15,000 lbs. or more to the square inch, and its porosity, or power of absorbing water. An average granite contains or will hold about one per cent. of water, and if its absorbent power is much greater than this, it shows that it is liable to be affected by the action of frost. If practicable, the natural outcrops of granite should be examined with a view to determine its durability. Where the rock which has been exposed for ages is found to be sound and strong at the surface, this affords conclusive proof of its durability. In contrast with the many excellences which granite possesses it has one fault which should not be lost sight of, and that is, the readiness with which it is destroyed by fire. From the close texture of the stone it expands unequally when heated on the surface, and exfoliates, sometimes with explosion. In this respect it is inferior to brick, sandstone, or even marble.

#### Church Organs.

H. R. OLIVER.

This noble instrument, king in the realm of music, complicated as it now is, yet of easy control under the hands of experts, fertile in varied symphonious effects, giving with equal and satisfying success the gentlest and most sympathetic tones, as well as complete and sublimely-full utterances of musical inspiration, has a remote and continuous history. Originating in rude form in the earliest Christian centuries, it is referred to in a Greek epigram of the fourth century as "with reeds of a new species agitated by blasts of wind that rush from a leathern cavern beneath their roots, while a robust mortal, running with swift fingers over the concordant keys, makes them smoothly dance and emit harmonious sounds." The "hydraulic organ," or "water-pipe organ," into which, by some unknown method, the air was introduced by water pressure, gave way in the sixth century to the wind organ. This, with "its loud sounds produced from divers pipes," had movements made of wood, which, "pressed down by the fingers of the player, produce the most pleasing and brilliant tones." This not very lucid description evidently points to the organ in its elemental state. In the seventh century it found its way into the church, and becoming known in Western Europe, grew rapidly into favour and general church use, though having but few pipes and fewer keys, and requiring the united work of several men. It is matter of wonder that an instrument whose extraordinary capabilities have been so completely developed within the last few

centuries should have remained thus long in so imperfect a condition. Even in the twelfth century its compass did not extend beyond two octaves, half-notes being then first introduced: nor were registers, without which no variety of stops could be secured, introduced till the seventeenth century. Pedals had, however, been introduced before that period. From the Reformation to the reign of Charles I., but little mention of this instrument was made in England. During his reign prejudice ran so strongly against the use of any instruments as aids in church music that nearly all the organs in the kingdom were destroyed, and organists driven to other employments for support, a deep-seated hatred by the Puritans for all forms of worship of the Established Church running to such extremes that Government was petitioned "to put down all cathedral churches with their piping of organs, ringing of chime bells, and squeaking of chanting boys." At the Restoration a change took place; but, as expert organ-builders were not to be had in England, foreign artisans were summoned, the most celebrated being Bernard Schmidt, who restored the art and supplied many skilled workmen.

#### Consistency in Ornament.

J. K. COLLING.

In every design for ornament there should be a certain consistency running throughout the whole; if nature be departed from in one portion, it should never be too closely followed in another. As the arrangement is usually obliged to be conventional, so the leaves in which, if I may so describe it, the arrangement is clothed must also be conventional. We should take the spirit and feeling more than the literal form; the broad and general character, not the minute or insignificant. It should be arranged either in a geometrical manner or in graceful flowing lines, or in a manner combining the two. Nature may be sometimes seen to be very geometric and regular: the house-leek grows with extraordinary regularity; the flower of the woody nightshade is a perfect five-pointed star; the pentagonal form is very exact, again, in the flower of the major convolvulus; the cruciform character is prettily developed in the insignificant flower of the willow herb and in the common single-stock—the triangular in the lily and snowdrop, the leaflets of the clover, and oxalis or wood-sorrel—the symmetrical in the mistletoe, and may be seen again in the manner in which leaves grow round a stem. The maple grows with great regularity in a cruciform manner, and probably suggested the design of many a boss centuries ago. I have a distinct recollection at this moment of some beautiful maple-leaf bosses in the groining of the chapter-house of Wells Cathedral, which were arranged in this manner—four maple leaves issuing from the centre. In old examples we constantly find such arrangements, or others of a like nature, taken advantage of. Bosses upon the square, in the Perpendicular period, are very common; as also in diapers and finials of the Decorated period, where one series is made to alternate with the next, as foliage always grows in nature; in flowing lines, also, nature presents a wonderful variety.

#### Thickness of Arches.

CHARLES ELLET.

In some investigations on the equilibrium of arches, made many years ago, I deduced the following simple and convenient rule for determining the proper depth or thickness of the voussoirs of a cut stone arch at the crown. Let S represent the span of the arch, and T the thickness at the crown.

$$\text{Then } T = \frac{3}{8} \sqrt{S},$$

or, the depth of the voussoir at the crown will be three-eighths the square root of the span. This simple rule is applicable to all arches, however great or however small the span, from a semicircle to the flattest segments ever attempted on public works. It is always safe.

#### Aniline Colours.

PROFESSOR ODLING.

The usual course of production of the principal aniline colours is briefly as follows:—Rectified coal-tar naphtha, consisting mainly of benzol and toluol, is acted on by nitric acid so as to furnish commercial nitrobenzol. This highly oxidised compound is next reduced by means of iron-turnings and acetic acid into aniline. This reduced aniline is then oxidised, usually by means of arsenic acid, whereby crude aniline-red is produced, which is afterwards subjected to various processes of purification. Purified aniline-red is the crystalline salt—usually the acetate or hydrochloride—of a base known as rosaniline. The acetate of rosaniline, heated with aniline, is converted into phenylated rosaniline or aniline-blue. Rosaniline itself, heated with the iodide of ethyl or methyl, is converted into the ethylated or methylated rosanilines known as Hofmann's violets. And lastly, by combination of the base of the violet with more iodide of ethyl, or methyl, so as to form, for instance, a methyl-iodide of the fully methylated base, there is production of aniline-green.



## NOTES AND COMMENTS.

AN Art Supplement descriptive of the exhibition of the Royal Hibernian Academy has been published by the *Dublin University Review*, which is the new organ of the University—hitherto the silent sister among Academies. We are glad to see so much enterprise. The criticism is vigorous and independent. There are several illustrations of the Irish, French, and English pictures in the exhibition, which have been executed by Messrs. SPRAGUE'S ink-photo process in the course of a few days. They are remarkable examples of expeditious work. One of them suggests the tell-tale character of photography. It was remarked that in Mr. MILLAIS'S portrait of Mr. HOOK, R.A., the eyes were not of equal brightness. The plate reveals the oversight in a marked way.

THE last Fine Art and Industrial Exhibition at York has not been successful. The number of persons attending the summer exhibition was 20,916, and during the remainder of the year 3,126, making a total number of visitors of 24,042. The receipts during the year have been 1,252*l.* 2*s.* 6*d.*, and the expenses 1,615*l.* 4*s.* 10*d.*, showing a deficiency of 363*l.* 2*s.* 4*d.* The conversions from the loan fund to life membership has amounted to 225*l.*, and the Council commends this mode of helping the institution to the favourable consideration of the contributors to the loan fund. The Council regards with concern the deficiency in the annual income for the last two years; and whilst looking forward to the holding of another special exhibition as a means of placing the institution in a better financial position, it earnestly seeks the co-operation of the citizens generally by a more liberal patronage of its efforts, and especially by taking more largely its annual tickets.

THERE is commotion in the Paris art world about the issue of Baron ALPHONSE ROTHSCHILD'S candidature for the vacant seat in the Institute of Fine Arts. It will be said that the baron is not an artist. But it should be known that in addition to the sections of painting, sculpture, architecture, engraving and musical composition, which practically constitute the Institute, there is one which is supplementary, where the majority of members are amateurs, as will be seen from a list of their names:—The Duke d'AUMALE, Count de NIEUWERKERKE, Baron HAUSSMANN, Prince NAPOLEON, Marquis de CHENNEVIÈRES, M. EMILE PERRIN, M. BARBET DE GOUX, M. ALLBUT LENOIR, and M. GRUYER. It is to that section Baron ROTHSCHILD seeks admission, and as a patron of art he has a claim to a seat. But the voting is not restricted to the members of the section, and it is understood that since one of the painters, who is possessed of much influence, is opposed to the candidature on the ground that the Institute should be reserved to professional artists, the baron's election is problematical. In consequence of informality in the arrangements the election will not be held until the close of the month.

DR. RUSSELL has carried out two inquiries into the proportion of carbonic acid in the atmosphere, and into the composition of London rain, for the Meteorological Council of the Royal Society. The amount of carbonic acid in London air has been determined at intervals during the last two and a half years. The average amount of carbonic acid present in the air of the city is slightly below four parts in 10,000 of air, and this is shown to be rather less than that which has been found in the air of the few other towns which have been examined. Taking the most recent experiments on the composition of purely country air as indicating that the amount of carbonic acid is as low as three parts in 10,000, even then it seems that in the heart of London the average increase is not considerable. Further, the individual analyses show that the amount of carbonic acid is often considerably below this average, usually during bright sunny days. The smallest amount of this gas found was 3·3 parts in 10,000 of air, and this was on the Bank Holiday in August 1883, and as far as experiments have yet been made, the amount present on a Bank Holiday is always considerably below the

average. The second series of determinations relate to the amount of carbonic acid present during a fog, and show how much this gas increases under such circumstances. The average of these experiments is 7·2. The largest amount found was 14·1, and this was during a long continued fog in December 1882. The gradual increase of the gas on this occasion up to this amount is traced; and other cases are given where there has been a very large increase of carbonic acid. The rapid disappearance of the carbonic acid with the disappearance of fog is also shown. The increase and diminution of this gas it is pointed out must indicate the coincident variation of the amount of many other impurities in the air. The variation of the amount with the time of year is also shown in the report.

THE samples of rain were collected simultaneously at three stations: one in the city at St. Bartholomew's Hospital, one at Hamilton Terrace on the north-west, and one at Hackney on the north-east of London. The collecting of samples was commenced in the autumn of 1882, and has been carried on to the present time. The amount of sulphates and chlorides in the rain has been determined, and it appears that on taking the average of each set of experiments, the rain collected in the city contains twice as much impurity as that in the suburbs. This impurity is essentially of the same kind in all cases. The samples collected at different times are shown to vary very considerably in composition; but, as a rule, the variations are not local, but extend over the whole district examined. It is seen from the analyses given to what a great extent rain acts as a purifier of the atmosphere. The analyses made up to the present time indicate that a greater amount of sulphates are present in the summer rain than in winter rain. This apparently indicates that to a large extent the sulphates come from the decay of animal and vegetable matter, and not merely from combustion of coal. The composition of London rain is also compared with that of the country. The rain collected in the city appears to be never acid; but if rain be collected in open vessels which are left exposed for some length of time to the air, it will then be found to be acid. This arises from soot collecting in such rain-water. It is further shown that the moisture in air condensed by application of cold contains impurities similar to those in rain, and that this method may be of service in examining the purity of air.

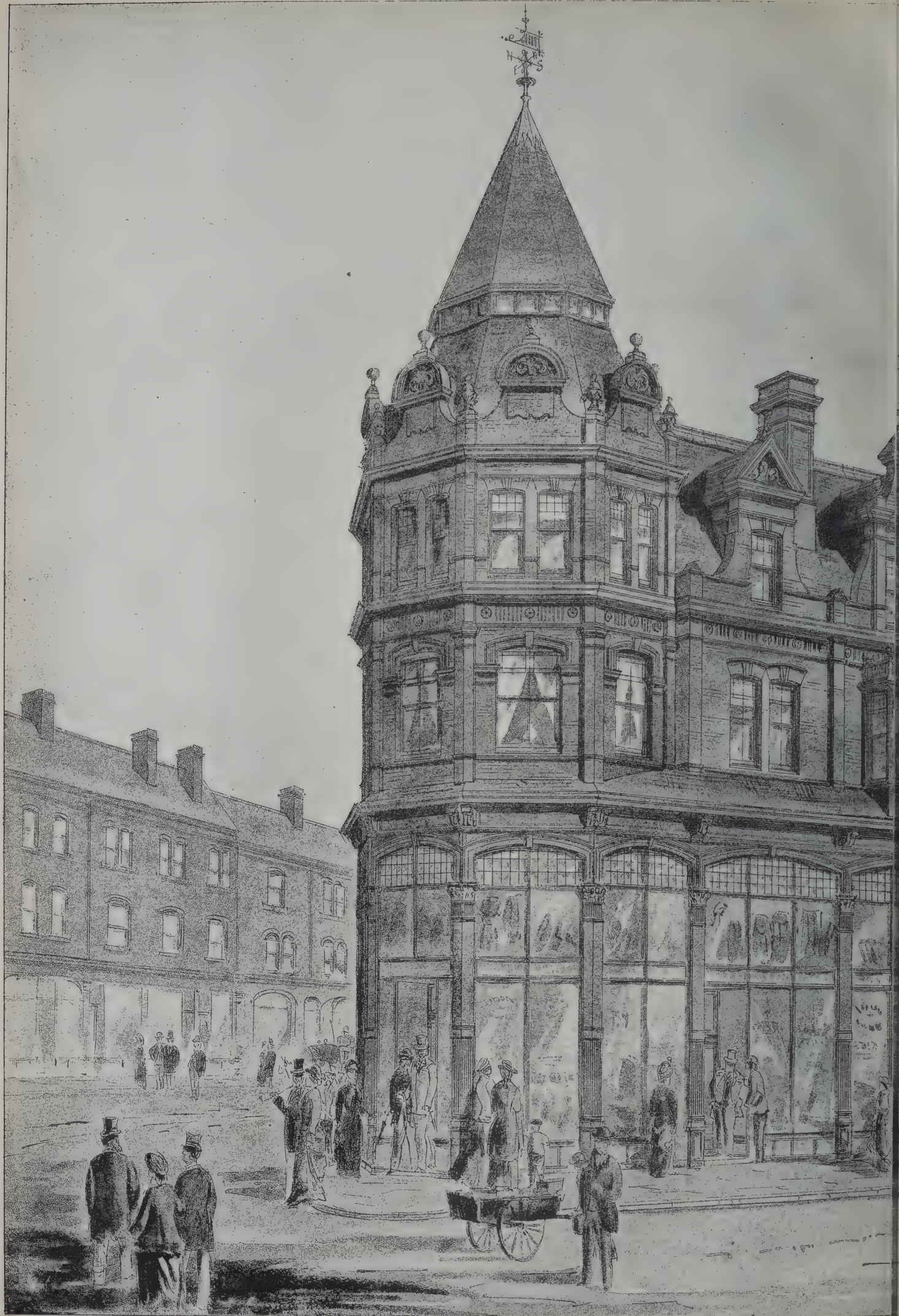
THE Court of Common Council have approved of the proposal to erect the Guildhall School of Music on the Victoria Embankment, near the City of London School. The site, which contains 8,000 feet superficial, at present belongs to the Metropolitan Board of Works, but it can be obtained on a 99 years' lease, at a ground-rent of 1,100*l.* per annum, and on the expiration of the lease it reverts to the Corporation. The outlay on the building will therefore be for the improvement of City property. Mr. HORACE JONES has estimated the cost of the school at 19,500*l.* It will comprise thirty-eight class-rooms (or double the number now used), organ-room, library, large practice-room, eight sets of lavatories, eight waiting and retiring-rooms, six rooms for principal and secretary's offices, with residential rooms for the secretary. The Guildhall School, under Mr. WEIST HILL'S direction, has been most successful, and the Corporation have reason to be proud of their work. In more commodious premises—where over four thousand pupils can be taught—it should do much towards making music a civic accomplishment.

M. ERNEST GOVIN, who was one of the leading contractors in France, died in Paris on March 24. During forty years he was connected with many of the largest undertakings on the Continent. After leaving the Polytechnic School, he was employed on the works of the railways between Paris and St. Germain. He constructed several bridges in France, Italy, and Austria, among others the large one in Pesth. In Russia he had one of the contracts on the line between St. Petersburg and Warsaw. M. GOVIN was a director of the Bank of France, and had been president of the Tribunal of Commerce. He held the rank of commander in the Legion of Honour.









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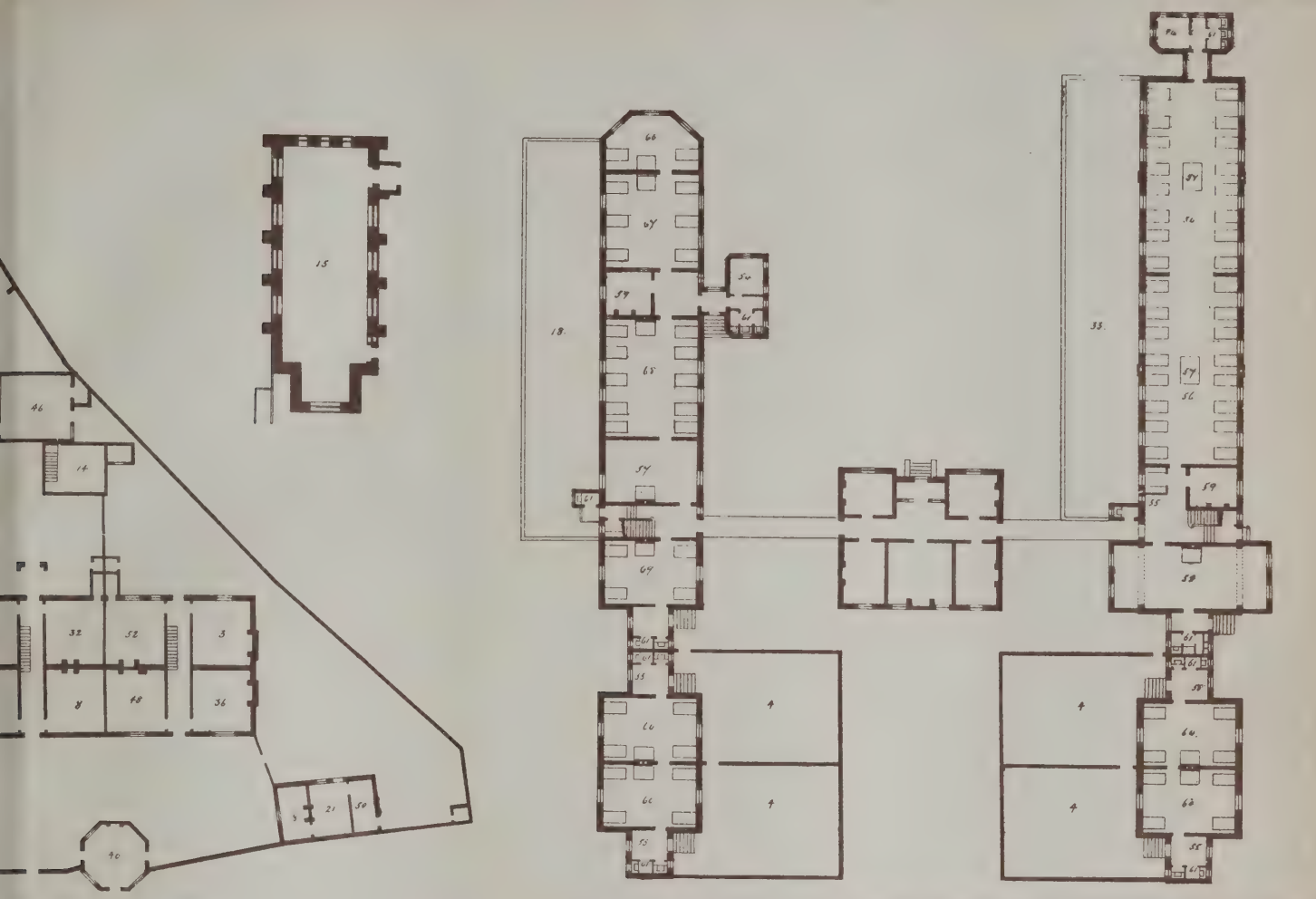












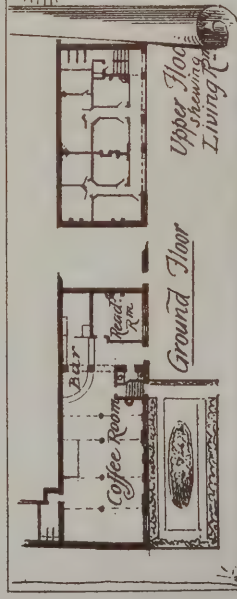




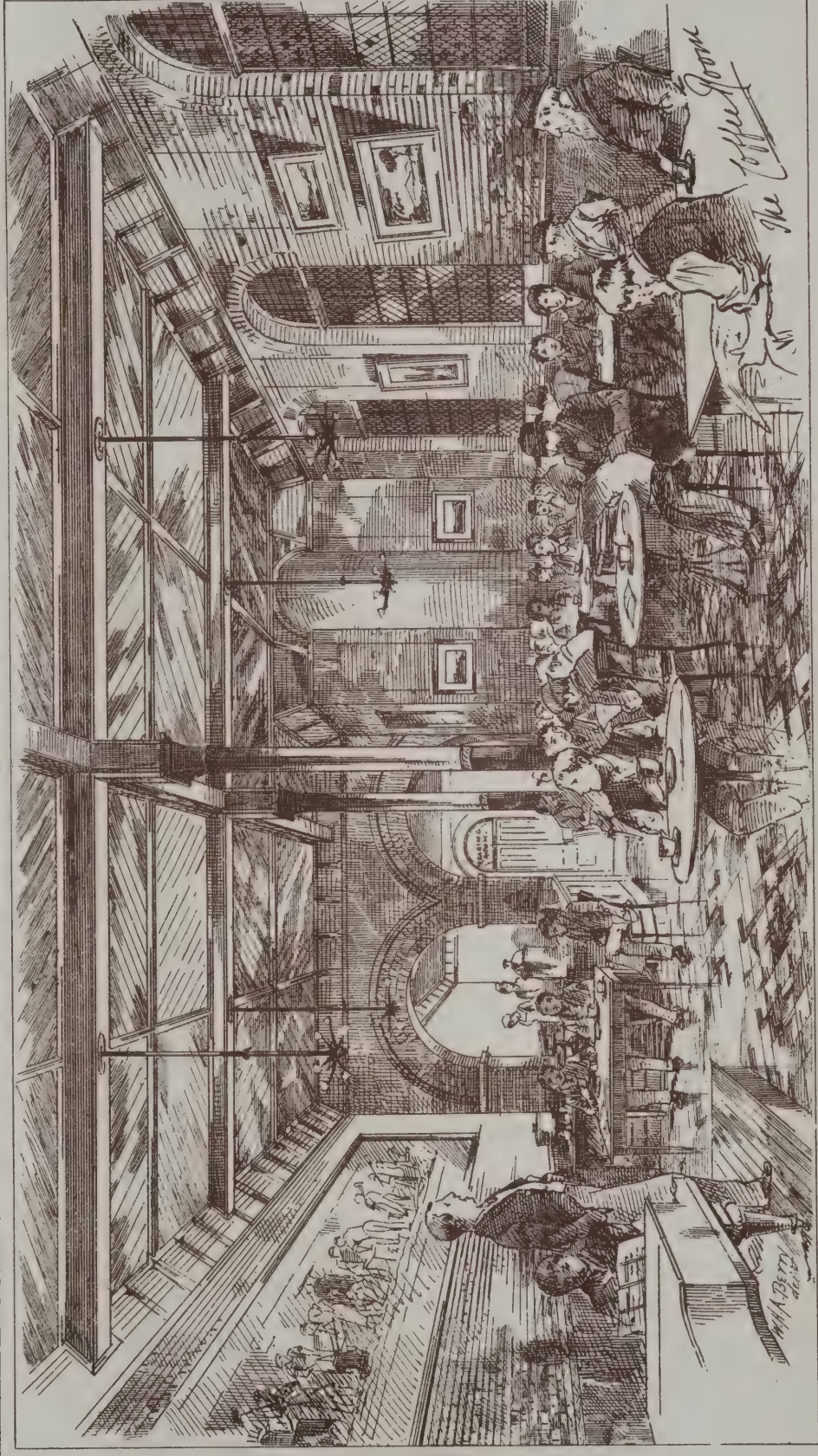












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## ILLUSTRATIONS.

## EPSOM INFIRMARY.

THE illustration of the Epsom Infirmary shows the new building recently erected in connection with the workhouse on the east side of the ground. The general disposition of the plan is as follows.

The male block is placed to the north, running east and west. The ground-floor contains two wards of 16 beds, each separated at pleasure by sliding doors. The building containing the water-closets, bath, and sink is separated from the wards by a passage with cross ventilation. Nurses' rooms and pantry are attached to these wards. Separated from these wards by the staircase is the day-room, with lobby and separate water-closet and urinal. The two wards beyond are for special cases, and are completely cut off from the other wards, and are provided with distinct airing-grounds. The first-floor plan extends as far as the day-room, and has two wards of 16 beds each, and a separate ward of 4 beds. The administrative block contains kitchen, doctor's-room, accident-room, and two receiving-rooms.

The south block contains on the ground-floor one ward of 10 beds for aged women, lying-in ward of 6 beds, and labour ward for 2 beds, day-room, separation ward for 4 beds, and two wards of 4 beds each for special cases. The first floor has one ward of 16 beds, one of 6 beds, and a separation ward of 4 beds. The wards are heated by POTTER'S thermhydic stoves, the latrines being heated by hot water.

The buildings are faced with CHUTER'S red bricks, and slated with Metz slates. The hot-water arrangements were by Mr. HARDS. The sanitary plumbing was executed by Messrs. TYLER, of Newgate Street, London, E.C. The total cost of the work was 9,888/. The builder was Mr. HUMPHRIS, of Sutton; the clerk of the works, Mr. COLEMAN. The work has been carried out from the designs of Mr. HERBERT D. APPLETON, A.R.I.B.A., of 157 Wool Exchange, Coleman Street, London, E.C.

## REFERENCE TO NUMBERS ON PLAN.

- |                          |                             |
|--------------------------|-----------------------------|
| 1. Able-bodied Women     | 36. Nurses' Sitting Rooms   |
| 2. Able-bodied Men       | 37. Old Men's Room          |
| 3. Accident Room         | 38. Open Shed               |
| 4. Airing Ground         | 39. Office                  |
| 5. Board Room            | 40. Porter's Lodge          |
| 6. Bread Room            | 41. Scullery                |
| 7. Boys' Schoolroom      | 42. Store                   |
| 8. Bedroom               | 43. Shoemaker               |
| 9. Committee Room        | 44. Stable                  |
| 10. Carpenter's Room     | 45. Saw Bench               |
| 11. Casual Ward          | 46. Stone-breaking Shed     |
| 12. Crank Shed           | 47. Sitting Room            |
| 13. Coachhouse           | 48. Surgery                 |
| 14. Clothing Store       | 49. Visitors' Room          |
| 15. Chapel               | 50. Washhouse               |
| 16. Dining Hall          | 51. Water Closet            |
| 17. Female Tramp Ward    | 52. Women's Receiving Ward  |
| 18. Female Airing Ground | 53. Wood-cutting Shed       |
| 19. Girls' Lavatory      | 54. Bathroom                |
| 20. Girls' Schools       | 55. Movable Bath            |
| 21. Kitchen              | 56. Male Wards              |
| 22. Lavatory             | 57. Hygratic Stoves         |
| 23. Laundry              | 58. Day Room                |
| 24. Lock-up              | 59. Men's Room              |
| 25. Mangle Room          | 60. Separation Wards        |
| 26. Meal Larder          | 61. Water Closets and Sinks |
| 27. Matron's Pantry      | 62. Kitchen                 |
| 28. Matron's Room        | 63. Doctor's Room           |
| 29. Master's Room        | 64. Receiving Rooms         |
| 30. Master's Office      | 65. Accident Room           |
| 31. Male Tramp Ward      | 66. Labour Ward             |
| 32. Men's Receiving Ward | 67. Lying-in Ward           |
| 33. Male Airing Ground   | 68. Women's Ward            |
| 34. Nursery              | 69. Aged Women's Ward       |
| 35. Nurses' Rooms        |                             |

## WORKMEN'S DWELLINGS, GLENGALL ROAD, S.E.

MESSRS. CHUBB & SON'S Lock and Safe Company (Limited) have recently added to their works at Glengall Road, S.E., a block of dwellings for their workmen, on a portion of the site of their lock and safe factory. The ground floor is occupied by a coffee-room, accommodating 250 workmen, and available for entertainments and lectures, a reading-room, kitchen, &c. The three floors above consist of tenement dwellings, so grouped that they can be combined without alteration into two-roomed, three-roomed, and four-roomed tenements, according to the varying requirements of the tenants. A laundry is provided on each floor, and the flat roof forms a drying-ground. Each tenement is furnished with coal-bin, cupboard, and cooking-range, and each tenant will have access to a garden which adjoins the building. The works have been carried out by Mr.

EDWARDS, of Kentish Town, from designs by Mr. E. HOOLE, F.R.I.B.A., of 104 Great Russell Street, W.C., the architect of Messrs. CHUBB'S factory. The buildings will shortly be opened by the Right Hon. the Earl of SHAFTESBURY, K.G.

## NEW PREMISES, PARADE AND EDWARD STREET, BIRMINGHAM.

THIS illustration represents a block of business premises now approaching completion at the corner of the Parade and Edward Street, consisting of seven shops, with large stores in the basement and dwelling-rooms over. The shop fronts are of wood, and the upper storeys of red brick with stone dressings, and the roofs covered with brown tiles.

The work is being carried out for Mr. THOS. GOUGH, from the designs of Mr. OLIVER ESSEX, A.R.I.B.A., of Paradise Street, Birmingham, at a cost of about 4,000/.

## THE ARCHITECTURAL ASSOCIATION.

AT the ordinary meeting of the Association held on Friday evening, March 20, Mr. Cole A. Adams, president, in the chair, Mr. F. L. Penrose, M.A., gave a lecture on

**Proportion in Architecture, Especially as Exemplified in the Works of the Greeks.**

Mr. PENROSE, in his remarks, spoke of proportion in architecture being twofold in nature. First, in the adaptation to meet the requirements of building and providing a proper support for the mass to be borne, beauty and gracefulness were not necessarily concomitants. In the second place, there was proportion that resulted in beauty, the outcome of a certain artistic sense of feeling which, consciously or unconsciously, was nearly always combined with rhythmical proportion. A knowledge of certain rules, however, might be serviceable in enabling the results to be obtained more readily, and the Greek buildings would be found to illustrate these rules or methods of proportion. The Doric school of architecture had been influenced by the acquaintance with the Egyptian architecture along the banks of the Nile. The Ionians had been influenced by the Phœnicians, whose work had been recognised by King Solomon in building the Temple. The Doric proportion was one of strength and masculinity; the Ionic, on the other hand, was one of elegance and femininity. Mr. Penrose then described the Acropolis at Athens, with its buildings and temples, as also the Parthenon, Propylæa, and Erechtheum, and referred to the proportion of the column and the entablature. At the Erechtheum this proportion was seen at its best, as the entablature showed solidity without being too heavy, though if it had been on Doric instead of Ionic columns the columns would have been overweighted. The Doric as it was developed tended to become more and more slender, till they passed the margin of safety in strength, when the Doric order was superseded by the Ionic and the Corinthian. The Erechtheum also illustrated in its other features fitness for the purpose intended. The plan of the building, in its regularity or irregularity, had been governed by the necessities of the site, and showed that, however strict and rigid the Greeks were in regard of symmetry, when circumstances required it they allowed themselves the greatest freedom, and so secured the best results. Speaking of the Greek mouldings, Mr. Penrose observed that they were invariably formed on the proportions of the conic sections, though the circle was rarely used. There was the ellipse or oval; the parabola, an infinitely prolonged ellipse, the lines of which always tended towards but never became parallel; and the hyperbola. The ellipse was much used by the Greeks for egg and tongue mouldings, the parabola generally for the sections of cornices, while the hyperbola was a favourite curve because of the wonderful effects of light and shade produced by its use. The Doric capital was a portion of an hyperbola, so that the curve always tended to get straighter and straighter, and caught the light in a most wonderful way. A pale atmosphere did not bring it out in the same wonderful way; but in bright sunlight the most exquisite effects of light and shade were got by almost insensible degrees. There was plenty of room for contrasts of light and shadow, and there were the most exquisite gradations, as also broad expanses of light with small shadow, or, inversely, much shadow and a small amount of light. When the Greeks used contrasted curves they did not use such curves as the Romans did—circles butting against each other—but they used either the hyperbola or the parabola, which became straight at the point of contact and then curved outwards. Mr. Penrose then described Professor Donaldson's table of Greek mouldings, and showed the description of curve that ran through all, the circle being hardly used at all; and he also explained how with the delicate curvature the subtle effects of



light and shade were produced. The Ionic volute was then considered, as also its origin in the very early Ionic work, which was characterised by scrollwork of the same description as that on the very early examples found at Mycenæ by Dr Schliemann, as well as in Asiatic Persepolis. This indicated the connection between Phœnician and Ionic work that found its development in the Ionic volute. The Roman volute was but a weak representation of the Ionic volute. Vitruvius gave a rule used in his time for drawing the Ionic volute, and much interest had been taken at various times to work the matter out, but none of the results hit off the volute exactly. There was a want of continuity seen which was entirely absent in the Ionic volute itself. Mr. Penrose said he had been led by a contemplation of the difficulty to offer an explanation, as also by the fact that in the volutes at the Erechtheum, a hollow eye was found in the centre, and this hollow eye was afterwards filled in by a boss. The meaning of it was to allow of placing a little instrument in the eye, which admitted of the curve being drawn by means of a string. The adoption of curves from the conic sections showed that the Greek architects were keeping abreast with the advance of science, in the days when the conic sections and their geometric properties were engaging the attention of mathematicians. Mr. Penrose then referred to rhythmical proportions, observing that no true result was obtained without them. The plans of the temples in their internal proportions and the external, which were the leading proportions, were all verified on a rhythmical scale. On the question of the Greek optical refinements, the treatment of the pediment was referred to, and Mr. Penrose showed that any straight line was affected by the proximity of other straight lines. When a second line was drawn, an effect of bulginess was produced in the centre. This was rectified by using oblique lines, which created an appearance of straightness. The Greeks discovered this effect, and used a certain amount of curvature to vertical as well as horizontal lines. With perfectly straight lines a column would look weak and impoverished in the middle of the shaft. The curvature applied was extremely delicate; a curve of such a nature could only be derived from the hyperbola. Mr. Penrose concluded by showing how the Greeks refined their vertical and horizontal lines, and mentioned several instances where the horizontal lines were to be found cambered.

### THE BALNEOGRAPH.

THERE are two styles of painting in water-colours, or even three styles, if we reckon the oldest method of all, where the drawing was completed in Indian ink and the colours washed over it, a system we can hardly call water-colour painting at all. The oldest system which can rank as an art of water-colour painting is that practised by Copley Fielding. It consisted in a superposition of washes. We have it from Fielding's niece, that her uncle never used a colour, but only washes of dirty water; by this means he obtained the extreme refinement of his skies and distant grounds. The fault of this system was that it led on to painting conventionally; it excluded completely any attempt at jotting down a portrait of nature—a true effect of colour, or light and shade—and, although it has had such eminent practitioners as Copley Fielding, it is a system of water-colour painting which is completely exploded, nearly as much so as the Indian ink shades and superimposed washes of Paul Sandy. The modern water-colour painter dashes on the exact tone of colour at once on his paper, and never touches it afterwards; by this means he obtains a brilliancy and life unknown to the elder masters. But it is a system that only the most clever hand and the most practised eye can use. The handling must not only be exact, but done with the utmost rapidity, for the tints of colour dry rapidly, and offer hard edges if they do, so that not only the beginner but also even able amateurs are condemned to the production of nothing but daubs. There is no master's help possible, no amending of faults and turning of the tyro's work into a sightable drawing for the gratification of papa and mamma; but what is worse, it is a question whether painting can be studied at all through the medium of water-colours, for study means at least deliberation, and no study is possible if the execution of the work must be done without sufficient time to think. This inconvenience, at least, the pupil need no more fear, thanks to the balneograph, a recent invention of Mr. Stephen Clift, an artist who practised successfully both in England and abroad. The balneograph keeps the paper on which we paint always damp, and so effectively that the author has sometimes left his drawing in the middle of some delicate sky, for a few hours, and then gone on with it without any trouble. We can now deliberate and think at ease, and although the colour once down must remain, there is no obstacle to our studying nature with the utmost care. To our mind, no more important invention in art processes has been made for a long time, and we are not surprised at the support it secures from such distinguished artists as Messrs. A. W. Hunt,

McNeil Whistler, Collingwood Smith, Ernest A. Waterlow, John White, Nathaniel E. Green, and Nicholas Chevalier, who all strongly recommend the invention.

### THE BIRMINGHAM ART GALLERY.

THE Museum and School of Art Committee of the Birmingham Corporation in their report state that the new Museum and Art Gallery Building is in a very forward state; the tiles are laid in galleries Nos. 5 and 6, and are being laid in the remaining galleries; the plastering is completed, and the plasterers and carvers are now at work in the entrance-hall and vestibule. The glazing and fixing of the sunlights for the artificial lighting will shortly be proceeded with. Mr. Whitworth Wallis, the keeper, commenced his duties on the 1st of January last, and the committee have, up to the present, appointed a clerk, a foreman, and a carpenter to assist him in the arrangement of the collections. Under his superintendence the examples of Florentine and Venetian stone and marble work comprised in the Robinson purchase have been removed into the Art Gallery, and are now being arranged and permanently fixed. The keeper has also prepared a register and catalogue of the whole of the collections in charge of the committee, numbering upwards of 9,000 objects, and has drawn out plans of the proposed arrangement of the cases in the new Art Gallery, where the collections will be at once transferred on the completion of the building. The committee have carefully considered the subject of the cases required for the exhibition of the various collections, including the Tangye collection of Wedgwood ware, on the opening of the galleries, and they find that thirty-two standing cases and twenty wall cases will be necessary, in addition to those already belonging to the Corporation, and available for use. They have, therefore, prepared specifications and drawings of the cases, and have invited tenders from the following firms:—The Midland Joinery Company, Birmingham; Messrs. Barnsley & Sons, Birmingham; Messrs. W. & J. Webb, Birmingham; Messrs. Holland & Sons, London; Messrs. Frederick Sage & Co., London; Messrs. Drew & Cadman, London. The lowest tender is that of Messrs. Holland & Sons for the sum of 1,542*l.*, and as this firm are the makers for the South Kensington Museum and the other national institutions, and therefore specially qualified for the work, the committee have accepted their tender, subject to confirmation by the Council. Some additional fittings will be necessary to complete the galleries, and the committee have them under consideration. They are, however, at present unable to give details of what will be required, but they estimate the cost at 758*l.*, which sum, together with the amounts previously specified, makes up a total of 2,300*l.*, being the amount of the committee's estimate of its expenditure on capital account for the current year. They therefore recommend that they be authorised to expend the sum of 758*l.* in completing the internal fittings of the Museum and Art Gallery, and that the Finance Committee be instructed to borrow, in accordance with the provisions of the statutes in that behalf, the sum of 2,300*l.*, being the amount required by the committee for the before-mentioned purposes. Rapid and satisfactory progress is being made with the School of Art. The greater part of the windows are glazed, the skylights are all glazed and the frames painted, and the plastering is nearly completed. The warming apparatus is fixed, the staircases are being put in, and the concrete for the floors and corridors is already down.

### COLOUR ON THE EXTERIOR OF BUILDINGS.\*

THE recent Healtheries Exhibition at South Kensington, where many novelties used in the construction and fitting-up of buildings have been on view, has, among other things, given rise to much interesting discussion turning upon the use of material, judged more particularly from its sanitary or unsanitary characteristics. One or two of the reformers, noted equally for their artistic ability, as well as for their knowledge of practical questions affecting the well-being of the community at large, in their crusade against dirt and dust, in which abound so many germs of disease, recommend very highly the use of facing materials, which are readily cleansed. Granite, marbles, and the like, which are capable of receiving a high polish are commended, but they draw attention more especially to materials having a glazed surface, such as enamelled bricks, tiles, and the new constructional faience made at Burmantofts and Lambeth. None of these materials lose their colour, and if kept clean in a systematic manner not dependent on an occasional shower of rain, they preserve a bright glittering appearance, which is attractive on account of its cleanliness.

\* From a paper by Mr. W. H. Thorp, read before the Leeds and Yorkshire Architectural Society.



The very greatest care, however, must be taken to avoid anything loud or garish in colour that would be out of harmony with the surroundings of the buildings, where this class of material is adopted. All might be well if we had not the British climate to contend against with its 'drizzling mists and yellow fogs charged with impurities, which, in our large towns, leave their grimy deposits upon everything they come in contact with. At present it would seem as if we must take things as they are, as there appears to be almost as little hope of the smoke and other impurities existing in large centres of population being improved away, as there is of our fickle climate changing from its usual humid conditions to one of dryness and sunshine.

The chief plea urged in favour of the use of these polished and glazed materials being that they impart colour to our thoroughfares, and their capacity for being cleansed, it will only be by reason of the scheme of colour being simple and appropriate to its position, and of the wall surfaces receiving their periodical washings and scrubbing, that they will meet with approval, and so come in for general adoption. What can look worse than a decorative piece of outside work coated with grime, its colour dimmed, with here and there a bright streak, where the rain has streamed down its surface?

Twenty years ago when Gothic of the Venetian palace type was all the rage, there were numerous buildings erected in London and elsewhere, in which polished slabs of marble were largely used for interior work, and relied upon for decorative effect; and, in some instances, pictorial treatment in glass mosaic was introduced. When new doubtless they looked pretty, and this sort of thing being a novelty in England found many admirers. But what can be said for them now that they have stood the test of two decades, exposed to the changes of our inhospitable climate, combined with the impurities with which the atmosphere is charged, which have been already alluded to? Little in their favour it must be confessed. What may be appropriate for Italy has not been found suitable for England. In the pure atmosphere and bright sunshine of the south, marbles and gay-coloured materials may be used with admirable effect, but not so in England. Our English climate demands of us a different kind of colour, and I think, conceived in a lower key.

In my opinion, in the colour of our buildings we do not want anything startling—no southern exotics foreign to our native soil, but something warm and mellow in effect, so as to contrast with the cold, grey, misty tones which habitually prevail in this country during eight months out of the twelve. And materials that contain just the right amount of colour may be had in abundance all over the land. Have we not building stones in a large variety of subdued colourings in various shades of yellow, brown, grey, and red? And in brick and terra-cotta, which are durable, and instead of rapidly deteriorating in appearance, are rather improved by exposure to the atmosphere than otherwise, can we not obtain an infinite diversity of tints, most of them warm and mellow in tone, and capable of imparting a cheerful appearance to the buildings in which they are used? In roof-coverings the mountains of Westmoreland, Cumberland, and Wales provide us with slates in large quantities in shades of grey, purple, and green, while the potteries in Staffordshire in their turn supply us with roofing tiles in reds, russets, and browns.

The homely buildings common to many of our country villages may often teach us a useful lesson in colour composition. In Worcestershire and Herefordshire there is many an old homestead in which is to be seen a picturesquely-grouped building with a good skyline. The lower part may be built of brick of a warm deep red, its original brightness toned down with age and exposure to the elements; the upper storey is probably timber, framed with here and there a gable or dormer with mullioned latticed windows; the framing a rich dark-brown, which contrasts admirably with the creamy tints of the parqueting, and the roof covered with red tiles, the ruddy hue varied here and there with clumps of house-leek, yellow lichen, and weather stains. These in colour are everything that could be wished for; and almost equally appropriate, and, as it were, indigenous to the soil, are many of the warm-tinted, stone-built houses common to many parts of Yorkshire. These do not startle you with any vivid contrasts in colour. On the contrary, they are sober in hue, studies in monochrome, the range of colour being to a large extent in the same key, and only comprising a few shades of drab, brown, and russet. Yet, in spite of their simplicity, they succeed in satisfying the eye trained to appreciate the subtle harmonies of colour.

Most of these habitations are roofed in with stone, technically known as grey slates, obtained from a species of laminated flagstone, whose lines of cleavage are somewhat similar to those of slate. A pleasant variety of colour is oftentimes imparted to these slates by the presence of peroxide of iron, and the mica produces a silvery appearance when exposed to the rays of the sun.

Whilst upon the subject of roof-coverings, I should like to ask you to avoid a Welsh slate of a certain purple-red tint,

which hardly ever looks well, and should never be used where a pleasing effect in colour is wished for.

The fashion of using two or three varieties of colouring in the slating of a roof, and arranging the slates in geometric designs, emphasised by the difference of the tint, has had its day, and we happily do not now see so many examples of it as we did formerly. The beauty of a roof, to my mind, consists in its grouping, and in a certain breadth of effect which is entirely destroyed by laying out parti-coloured Chinese puzzles upon its sloping faces. There are several precedents for this mode of treatment in old work, but these should not prevent us from exercising a wise discretion by adopting it but rarely.

In ancient buildings, examples not only of coloured patterned arrangements in slates are to be met with, but the practice also applied to tile-roof coverings. This mode of treatment was more common abroad than at home, and examples of the latter may be seen in Dijon, the ancient capital of Burgundy, where may be observed many schemes of vivid colouring in the roofs, in which the startling effect is enhanced by the use of glazed tiles for the more pronounced features of the design.

One case in point is recalled to my mind—that of the Hôtel de Vogüé, which in many respects is one of the most interesting types of early French Renaissance of the time of Francis I. there is now remaining. But if these geometric arrangements do not meet with much commendation from me, do let me request you to give more thought to your roof coverings than is usually bestowed upon them, for their colour alone often plays an important part in the general effect of a building, and I have seen houses of little interest redeemed from the commonplace by attention to this little matter of detail.

At the risk of wearying you I cannot leave the topic of slates without referring to the excellent effects obtained by the use of this material which are to be met with in Belgium and Germany, and are especially noticeable on the banks of the Meuse, Moselle, and Rhine. As a usual thing the tail-pieces of the slates are rounded, and instead of being arranged in horizontal courses they are put on so as to form a slight angle with the eaves, and have an appearance akin to that of the scale of a fish. Many of the gable ends are slate hung, instead of hung with tiles as is more common with us, and bands of scale-patterned slates, alternating with surfaces of plain horizontal ones, give a slight variation in colour—another shade of the same tint which is gratifying to the eye. In the autumn of 1883, in walking along the banks of the Meuse between Namur and Dinant, the many ways in which slate is there turned to account was forced upon my attention, and in nearly every little hamlet passed through I noticed some quaint turret or *flèche* distinguishing the church from its environment of houses, slated merely, but forming nevertheless, with its harmony of silvery-greys and greens, a study for the artist.

Although brick may seem a commonplace material upon which to descant in these pages, it is, if handled in a masterly manner, capable of great things. If there is one place more than another that I can think of which satisfies the eye for colour it is Bruges; and yet this effect is produced by the simplest means, the brick of which most of the buildings are constructed being the chief element. The Belgian climate is very similar to our own, and the result is by no means dependent upon such adventitious aids as the brilliant sunshine and blue skies of Southern Europe. But what brick it is, and in what an infinite variety of colourings, from tawny yellows, low-toned reds to deep Indian reds, crimsons, russets, and purply-browns; and how admirably it contrasts with the colour of the roofs and the pellucid greys and greens of the canals from which so many of the buildings rise, which bathe their feet and cover their walls with mossy verdure! Yes, brick and its handmaid, terra-cotta, may do us much service in giving us a warm sense of colour in our thoroughfares, and it is a subject for congratulation that the reign of *compo* and *stucco*, if not quite ended, is lingering out its latter days.

In cases where stone and brickwork are used together there is still room for improvement in the way in which the materials are handled and the colour distributed. They seem to manage this combination of the two better in the Low Countries than we do at home, as may be seen, for example, in the town halls of Haarlem, Leyden, Veere, and Middleburg; and in ancient buildings it was a common practice to emphasise their façades by introducing horizontal courses of stone in conjunction with the brick facework. Specimens of this mode of treatment are common all over the Netherlands and Flanders, and it will suffice to name one familiar example—the old Boucheries at Antwerp. Where age has toned down the rather vivid contrasts between the red and the colour of the stone, the effect is rather agreeable than otherwise; but when new, the appearance, if piquant, is too startling. In modern work a building treated in this manner, with the colour distributed in the same happy way as of old, would be an agreeable variety amongst others of a quieter type, and one or two of our leading architects have not hesitated to adopt it in some of their recent masterly compositions.

In the outside painting of woodwork and ironwork there is



still considerable room for improvement. "Self oak" for woodwork and a strong obtrusive Prussian green for ironwork still hold the mastery, and it is only occasionally that we find these colours deviated from. In the case of buildings erected of stone it is my practice, as a usual thing, to have the principal outside work, such as doors, gates, window-frames, and timbers in the gables, painted an umber-brown, which I sometimes vary with an olive tinge, and, if the building is in the country, to have the sashes painted cream or vellum colour, which contrasts well with the brown, and generally succeeds in brightening up the design. A good olive-russet, or a particular shade of madder, with a purple tinge approaching plum-colour, may, by way of variety, take the place of the umber brown, and the result should be successful.

Where brick is used (and so-called "Queen Anne" houses, built of red brick and tile, are still the fashion), many people prefer to have the whole of the woodwork painted vellum-white; but, personally, although I use this colour for the window-sashes, I prefer a stronger colour for the main features of the woodwork. There is a certain shade of greyish blue-green which contrasts admirably with the masses of brickwork, and helps to neutralise the reds, which is preferable to the mode first described, and if cream or ivory white is used for coved cement cornices or outside parquetry work, the balance of colour is preserved.

For iron gates and palisades, dark Indian reds and chocolate browns, olives, and steel-blue greys are admissible and appropriate.

### THE USE OF GAS FOR HEATING.

A SPECIAL committee was lately appointed by the Town Council of Glasgow to consider the subject of the utilisation of gas for heating and cooking. A report was prepared, from which we take the following:—The substance of the information the committee have been able to obtain, by correspondence and personal inquiry in other towns, is as follows:—A few years ago an experiment was made by some of the English corporations in hiring out gas cooking and heating stoves. The principle of this experiment was simply an extension of the system of supplying meters to consumers, and charging an annual rent for their use. It was considered of special importance to develop a demand for gas during the summer season and during the day, when the gasworks, with the permanent staff, were only partially employed. Every thousand feet of gas sold in this way yielded a far larger proportionate gain than the gas sold for lighting, as it costs practically nothing either for permanent works, permanent staff, distribution, or collection of rent. It was thus a most important source of increased revenue, and gas companies and corporations were willing to supply stoves at such a hire as would simply pay for interest on capital, upkeep, deterioration, and management, looking for their profit to the increased sale of gas. This system seemed to supply the one thing needed for the popularisation of gas for domestic use. The experiment was a success, immediate and complete. Thousands of consumers who would never venture upon the (to them) doubtful experiment of buying a gas stove are easily induced to hire, at a small rent, a cooking stove or heater as a convenient auxiliary to their permanent conveniences. They seldom return them. Their convenience is such that, once used, they cannot be dispensed with. They are found to be perfectly adapted for cooking—cleanly, convenient, time-saving, economical—and give universal satisfaction to the public. A success so pronounced was certain of universal imitation, and the hiring system has now been adopted by nearly every town, large and small, in England and Scotland, Glasgow, to the astonishment of all who know her as a progressive city, being a notable exception. Inverness, Elgin, Forres, Aberdeen, Brechin, Coatbridge, Dumfries, and many other Scotch towns, have adopted it successfully. Dundee has disposed of 1,200 stoves; Leicester has 2,100 out on hire, and 500 owned by consumers; Hull has over 2,000 stoves hired out. The Gaslight and Coke Company, London, have 4,000 stoves hired out, and probably 1,600 owned by consumers. They are hiring them out now at the rate of 40s. a week. The South Metropolitan Gas Company have out 2,500 stoves on hire, and a large number in hands of private consumers. Your sub-committee have been unable to see anything in the circumstances of Glasgow to warrant them in supposing that a system so successful and satisfactory elsewhere would not be quite as suitable for adoption here.

We are aware that various objections of a general kind will present themselves to the Gas Committee. The first is that the Corporation have already more than enough work to do, and should not add to their responsibility unless under urgent necessity. We have already shown that, in our opinion, this extension of the gas department is a proper and legitimate part of the Corporation work, and, if so, should on that account be taken on hand, whatever might be its difficulty. But we would

also add that the only really difficult work is in organising the department. In actual working the difficulties are *nil*, as the details are mostly of a kind that can be without trouble amalgamated with the regular routine. If a committee be appointed to organise the system, along with the general manager and the treasurer, the work will be afterwards but a very trifling addition to the duties of the Works Committee. Another objection that may be urged is that the Corporation are interfering with private enterprise. This, if true, might be a sound objection. But, in the first place, we contend that the public interest is the supreme consideration for the Gas Committee, and in the next that this movement would not be an interference with, but a great stimulus and help to private enterprise. It would greatly encourage the local manufacturers of gas apparatus, and cause at the same time such a general awakening in the public mind to gas-consuming conveniences that a greatly increased trade would spring up throughout the city for gas appliances and suitable cooking utensils, and other articles connected therewith. We have made the most careful and exhaustive inquiry on this head, being well aware that this is a point on which your minds would be specially sensitive, and we find that in all cases the result has been as we have stated. The first feeling of the local tradesmen has very generally been one of alarm, but their experience in the end has been that, instead of being injured, they have been benefited. Another objection that may be raised is that Glasgow gas is too good and too dear. Probably the best reply to this objection is that Scotch towns, such as Dundee, Aberdeen, Dumfries, &c., supplying gas of equal quality and price, have successfully introduced the hiring of gas stoves. The sub-committee have also ascertained from makers of gas stoves that there is no difficulty whatever in adapting the stoves to burn any quality of gas; and that the richer the gas the less is the quantity required to do the same amount of work. All experience goes to show that this objection has no force. The sub-committee considered it absolutely necessary, before reporting on a matter of this importance, that they should make an exhaustive and complete inquiry into the whole system as carried out in other places. We therefore addressed letters of inquiry to the following:—British Gas Company, Hull; South Shields Gas Company; Darlington; Scarborough; Dumfries; Aberdeen; Inverness; Elgin; Forres. Several of the members of the sub-committee, accompanied by Mr. Foulis, visited the following towns and establishments therein, viz.:—London, Birmingham, Leicester, and Dundee. Details are given of the information in this way collected, and the report proceeds:—"Most of the corporations exhibit and sell a large variety of gas appliances not suitable for hiring. This is adopted solely with the view of educating the consumers and spreading a demand for the various kinds of gas apparatus, and, as the price fixed is generally the ordinary retail trade price, the articles are simply supplied for the convenience and at the request of the public. The general charge for hire is 10 to 15 per cent. per annum on the cost price, collected quarterly, along with the gas accounts. The sub-committee are of opinion that, if action is to be taken in the matter by the Glasgow Gas Committee and the Town Council, it should be taken promptly and effectively. The months of May and June are the months in which householders are most disposed to make a beginning in gas cooking. They therefore recommend:—1. That the Gas Committee resolve to adopt the system of hiring-out cooking and heating stoves, &c., on the general lines already adopted by the corporations in England and Scotland, but modified and adapted to local circumstances as may seem advisable. 2. That a variety of approved gas appliances be exhibited, and (if desired) supplied to the gas consumers at the ordinary trade price. 3. That a committee be appointed, along with Mr. Foulis and Mr. Ross, to organise the department, and to make all arrangements necessary for the successful commencement of the system."

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### SURVEYORS' PRACTICE FIFTY YEARS SINCE.

THE following representation of the practice of building surveyors in the days before the Institute of Architects was founded suggests a state of things that happily may be numbered among "bygones." It will suggest some of the reasons which induced the founders of the Institute to lay down a line of demarcation between surveying and architectural work:—

The first thing I shall notice is that disgraceful mode of giving evidence in courts of justice, which has made the very



name of a surveyor a laughing-stock for the legal profession. His evidence in a court of law is looked upon in the same light as that of a horse-jockey in a horse cause; and can we be surprised at it, when similar evidence to the following is constantly given?

Plaintiff A and defendant B are at issue upon an account for works executed. The witnesses of A state that the work is done in a very superior manner: one witness swears that the work is fairly worth 1,544*l.*; and another witness, to support him, swears the fair value is 1,630*l.* Then come the defendant's witnesses, who state that the work is very badly executed, and done in a very improper manner: one of them asserts that the outside value of the plaintiff's work is 930*l.*, and another surveyor says he makes the value 935*l.* Now, what are the judge and jury, who know no more about a building account than a boy of seven years old, to do in such a case? They are surprised and astonished that respectable men can be so very wide in their values; and what is the result? Why, they take the several amounts as given in evidence, add them together, and divide the amount by the number of witnesses; accordingly the result in the above case would be that a verdict would be given for 1,257*l.* Now, let architects and surveyors reflect upon this disgraceful mode of giving evidence (and they know too well that what I have stated is pretty near the truth), and ask themselves whether it is not time that something should be done to redeem the character of their profession?

Again, do we not find it frequently the case that gentlemen have such an antipathy to the name of a surveyor, that, if the builder were to mention to his employer that he was about to engage a surveyor to measure the works executed, he would immediately give offence? consequently, the builder is obliged to introduce the surveyor into the building by stealth. Nor can any one be surprised at it when we witness the extortionate charges made by some surveyors, whom I shall here style custom surveyors. This is the manner in which they proceed. Two surveyors meet to make out an account of certain works done. We will suppose the account that they have to settle is a plumber's bill. The first article is 18 cwt. of milled lead: the plumber's surveyor requires 25*s.* per cwt.; the surveyor for the opposite party remonstrates, and points out to him that the prime cost was 15*s.*; the other replies that 25*s.* is the customary price, and that he cannot take less. To convince his opponent he opens an old measuring-book, and shows that 25*s.* has been charged in an account that he settled on behalf of Mr. Getall with Mr. Easy the surveyor some years before, and he again repeats that it is the custom to charge 25*s.*, and that he cannot deviate from it. In the same way he charges 1*s.* per foot for pipe that only cost 4*d.*, and 1*s.* per lb. for solder that only cost 5*d.*; and so he goes on in the same ratio with all other articles in the bill. After charging so extortionately for the time and materials for making a joint to a pipe, he has the conscience to ask, in addition, 2*s.* 6*d.* for that joint, though he cannot tell why he does so, except that it is the custom, &c. The consequence of all this is, that the surveyor for the opposite party, if he have any conscience, cannot settle the account, and it is referred to the lawyers; it is then carried into a court of justice, where it is decided in a similar manner to that which I have before described.

Can it be a matter of surprise that there should be so little measuring, when the charges are made out in the way I have stated? As a remedy, I would recommend every person intending to build to have the work done by contract. I would contract even for a dog-kennel, until these custom surveyors are brought to their senses. This, I think, they soon will be; for, in consequence of the manner of proceeding which I have described, they are employed less and less every day.

Another great error in valuing builders' work is that the surveyors too frequently charge but one price, whether the work be done well or ill, and that they pay no regard to the prime cost or to the mode of payment. The latter ought to be taken into serious consideration, for, if the work be paid for as it proceeds, it will enable the builder to purchase his materials with cash, and thus generally 10 per cent. cheaper in the market than if he had to obtain them on credit. On the other hand, if the work be not paid for till some time after it is finished, a considerable increase ought to be allowed for the disadvantages of being obliged to purchase on credit, and for the use of the ready money necessarily laid out in workmen's wages. Something also should be allowed for risk, as builders are liable to have bad debts as well as other tradesmen.

Having said thus much respecting surveyors, I will now allude to one or two abuses that have lately been introduced among architects. It is now the fashion among some of the principal architects not to allow the builder to employ a surveyor to measure his work, but to insist upon the builder leaving it entirely to the architect's clerk or to a surveyor named by him. Every practical surveyor must at once see the evil consequences of this mode of proceeding; because he must know that, even with the greatest caution and with the utmost rectitude of intention, mistakes will creep in if only one surveyor is employed. Even the simple circumstance of omitting to double

or treble a dimension, may make some hundreds of pounds difference. It is this species of error that causes so great a difference in estimates for work to be performed, and frequently have I known this to be the case. I recollect certain estimates that were made for building a church, and the difference was very great between the two lowest; the parties compared books, and it was discovered that in the lowest the amount of the gallery had not been doubled; every other part was taken by both parties as accurately as could be required. What is most disgraceful in the modern practice alluded to is, that the architect's clerk or surveyor frequently charges the builder a commission for measuring; or, what is equally bad, he gets the tradesman to repair or paint his house, or to execute some other job, which the latter is obliged to do to keep himself in favour, the architect, at the same time, not forgetting to charge his employer with his commission for measuring.

Another disgraceful practice, which is either owing to ignorance or knavery, is that some architects deceive their employers, by making very pretty and attractive drawings, and reporting that the expense of carrying these into execution will be about half or two-thirds of what it actually turns out to be. In this way they obtain the sanction of their employer to commence building; and when the accounts are sent in, the employer finds himself involved too frequently in ruinous expenses. The builder, in such cases, often gets into disgrace, and is either obliged to commence an action to obtain his rights (because the architect has the knavery, in order to screen his ignorance, to say that the builder's bill is a most exorbitant one), or to have his bill cut down so low that he is left a loser instead of a gainer, after labouring hard for twelve or eighteen months. To remedy this evil, I would advise the parties intending to build to contract with the architect for his commission, as well as with the builder for his work. This might be done in the following manner:—If the architect reports that the building will amount to 2,000*l.*, his commission should be fixed at 100*l.*; and, if the work exceed 5 per cent. beyond his report, it should be arranged that there should be a deduction from his commission of 5 per cent. on the excess of the amount beyond the original estimate. Thus, if the original estimate were 2,000*l.* and the actual cost 2,500*l.*, the commission of the architect, instead of being 125*l.*, as it would be by the present custom, would be only 75*l.*; whereas had the amount been within 2,100*l.*, his commission would have been 100*l.* By thus reducing the architect's commission, instead of increasing it when the expense exceeds the estimate, as is now the practice, the temptation to give in false estimates would be diminished, though these estimates are likely to be often made as long as the inducement is so strong as it is at present.

Another very paltry trick common among some architects is their custom of exacting from the builder a commission for all works done under their direction, and, if this be refused, informing the builder that his services are no longer required.

Having said this much, allow me to point out a mode by which, I think, these abuses might be remedied. This is simply to form a society, not for eating and drinking, or backbiting their brethren, but to make rules for the governance of the profession; to make a fair tariff of prices, according to the variation of the market; to regulate the mode of measuring; and to inquire into every abuse or infringement connected with the profession. I have no doubt that if thirty or forty respectable members of the profession would form such a society, it would very soon eradicate the numerous abuses which at present exist, and that architects and surveyors would soon regain that respect with the public which they formerly possessed.



#### Trusteeships v. Mortgages.

SIR,—The recent decision of Mr. Justice Kay limiting the sum to be advanced on mortgage to one-half the estimated value of securities, as in the case of *Fry v. Tapson*, reported in the current number of *The Law Reports*, Chancery Division, will strike terror into trustees, alarm building speculators, unnerve lawyers, stop building, and throw thousands out of employment, and at no time could such a decision have been given more inopportunistically—trade bad, industrious men out of employment, and distress rapidly increasing. The building industry of the country is a very large and important industry, and to cripple it means ruin to thousands. The large towns throughout the country are extended mainly on borrowed capital, and much of that capital is trust funds; but if trustees may not, in safety, advance more than 50 per cent. of the reported value of property, speculators cannot take trust money. The effect will therefore be to raise the price of all securities that trustees may invest in, and reduce the incomes



of all those who depend for revenue on trust money. The business of building material merchants will be ruined; the import and manufacturing enterprise of the country, so far as timber, iron, stone, bricks, slates, ironmongery, &c., are concerned, will be paralysed; shopkeepers will have their business largely reduced, with an augmentation of poor-rates and a reduced exchequer; whilst many lawyers will find their occupation gone, unless Judge Kay's decision is upset or circumvented. An appeal may (as appeals generally do) reverse it; but that may be a lengthy process, and in some minds would still leave doubt. A readier and more certain proceeding will be by means of a short Act of Parliament defining the proportion of value that may be advanced by trustees on land and houses—say two-thirds or three-fourths. This would reassure trustees, give confidence to lawyers, and protect the building industry of the country. If this be not done, the further effect will be to deter private people from undertaking trusteeship. People will, therefore, have to employ solicitors as trustees, and, of course, they will charge for their services. A man may have a pretty good estate put by for his children; but, if he is a prudent man, he will not undertake the obligations of trusteeship, and so jeopardise his estate. Whilst the panic lasts the large building societies will have an opportunity of selecting good securities on their own terms, and it is just possible that mortgage companies will be projected to pick up the business which may be seeking financial friends. Some time back a mortgage company was floated with a capital of a million and a half, and had to be wound-up for want of business. It is said that everything comes to those who wait. Had that company waited till the present it would have found its time had come.

I am yours, &c.,

T. E. KNIGHTLEY.

#### The New Street from Bloomsbury to the Haymarket.

SIR,—I have seen the letter by "Argus" inserted in *The Architect* of last week, and fully endorse the views expressed. I have no hesitation in saying that the approach to this new thoroughfare is absolutely spoilt by the said public-house remaining at the corner. Walking from Bloomsbury Square in that direction, the building in question is in my opinion one of the most unsightly blocks in any part of the metropolis. What the Board of Works have been thinking of by allowing it to remain must puzzle everybody who has the slightest idea of either convenience or architecture.—I enclose my card, and remain yours respectfully,

ARCHITECT.

March 31, 1885.

#### NEW BUILDINGS.

**Public Baths, Pollokshields.**—The new baths in Leslie Street, which have been erected by a company, are now open. They consist of a Turkish bath, a swimming bath, measuring 75 feet by 35 feet, and having an average depth of 4 feet 9 inches; plunge, spray, wave, douche, rain baths, &c., with a gymnasium, billiard-rooms, &c. In the construction of the buildings concrete has been largely used. The heating is by hot-water pipes, and in four hours in winter the swimming baths can be raised 70 deg. Mr. James Hamilton was the architect.

**Savings Bank, Salford.**—The trustees of the Manchester and Salford Savings Bank have undertaken a new bank for their Salford business. The site is in Chapel Street, the chief thoroughfare of the borough. There is to be a spacious and commodious bank, with ample cellars, and a number of other apartments. Messrs. Medland and Henry Taylor, of Manchester, are the architects, and Mr. Thomas Scott the builder. The design is Italian. The material chiefly brick—glazed brick in the bank room, which has a wooden panelled ceiling, so that no plaster is required.

#### CHURCH BUILDING AND RESTORATION.

**Ashton-under-Lyne.**—At the Manchester Consistory Court on March 27, application was made for a citation with reference to the erection of a new tower to the parish church. It was stated that the existing tower was in an insecure and dangerous condition, and that the architect (Mr. J. S. Crowther) had advised its removal and reconstruction. It had a fine peal of ten bells, which, however, had not been rung for the last two years. The new tower would be of the same breadth from north to south as the present one, and three feet longer as from east to west, thereby making it a perfect square building. Thirteen graves would be interfered with, but there had been no interments in any of them since 1821. The promoters undertook to remove the remains of the bodies to new graves and to replace the present stones on them. The cost of the work, between 8,000*l.* and 9,000*l.*, would be defrayed by voluntary subscriptions, of which 4,500*l.* had been promised or paid. The Court decreed a citation in accordance with the application.

**Holywell Church.**—In the description of this church, which appeared last week, it should have been stated that the contract for the renovation was undertaken by the Midland Joinery Company, and that the woodwork, including the pulpit, stalls, &c., executed by them, has received much commendation.

#### GENERAL.

**The Paintings and Drawings** which have been sent to the Salon this year are 7,200 in number, or about 500 less than last year.

**Mr. E. Burne Jones** will not send a picture to the exhibition of the Grosvenor Gallery this year, owing to the engrossing character of a large mosaic on which he is engaged.

**Mr. W. B. Scott** intends to dispose of his collection of etchings, engravings, and drawings, and from the care taken in the selection they are likely to attract high prices. There are a great many drawings by William Blake.

**Mr. Boehm** has completed the model of the statue of the late Mr. Bass which is to be erected in Derby.

**Mr. E. Griffiths** has obtained the commission for the sculpture of the new Museum of Science and Art which is being erected in Chester from the designs of Mr. T. M. Lockwood.

**Mr. J. D. Sedding** has been appointed architect for the restoration of the great screen in Winchester Cathedral.

**The Nottingham Town Council** have purchased Mr. W. S. Jay's picture *At the Fall of the Leaf* for the Art Gallery.

**The Building Committee of the Salford Town Council** have proposed that any new street to be hereafter laid out not exceeding 440 yards in length should be not less than 12 yards in width, and that a resolution allowing streets which do not exceed 100 yards in length to be 10 yards in width be rescinded.

**M. Geoffroy Dechaune** has been nominated conservator of the Museum of Comparative Sculpture in the Trocadéro, Paris.

**Mr. Alex. J. Scally**, who has been for the last ten years principal draughtsman in the Burgh Engineer's Office, Edinburgh, has received an appointment as surveyor for the World Publishing Company, in New South Wales.

**M. Clermont-Ganneau** has brought out his book on the archaeological frauds in Palestine that he was instrumental in unmasking, and for which English people should be grateful, as he saved the authorities from expending money on worthless fabrications.

**A Four-light Munich Window** has just been erected in St. Mary's Church, Arbroath, the gift of Mr. and Mrs. Muir, of Abbey Bank. It occupies the west end of the church, and the leading features of the window are large sized figures of St. Paul, St. Peter, St. Andrew, and St. John, while under each apostle is a small subject, descriptive of a scene in his life. The artists are Messrs. Mayer & Co.

**A Committee** has been appointed for the establishment of an art school and art museum in Colchester.

**Mr. E. H. Bental** has offered to give 100*l.* towards the completion of the restoration of the parish church of Heybridge, the tower of which still remains untouched, provided that another 100*l.* is raised and added to the funds now required for the purpose.

**Messrs. Landless & Clifford**, of Glasgow, have been appointed architects for the new Board School which is about to be erected at Hamilton Crescent, Partick. There were thirteen competitors.

**An International Sanitary Conference** is likely to be held in Rome during May.

**The Council of Rossall School** contemplate making various alterations and extensions at an estimated cost of about 18,000*l.* Among the extensions it is proposed to erect studies and dormitories for 125 boys, three house-rooms, seven masters'-rooms, and science class-rooms.

**Mr. H. H. Leonard**, quantity surveyor, Bishopsgate Street, has taken Mr. Stanley Clarke into partnership.

**Stapleford Hall, Leicestershire**, has been purchased by Mr. Hornsby, of Grantham. It belonged at one time to the Earls of Harborough. The hall is built of stone, and the earliest portion was erected about 1500 by Mr. Thomas Sherard, according to a date on the east front; and on another part of the building a tablet states that "William Lord Sherard, Baron of Leytrim, repaired this building A.D. 1631."

**The Memorial Stone** of the new St. Mark's Schools, at Manningham, Bradford, was laid on Saturday by the mayor. The architects of the building are Messrs. Morley & Woodhouse.

**St. Bernard's Well**, with the adjoining ground, which in the last century formed a favourite resort of the citizens of Edinburgh, have been purchased by Mr. William Neilson, and will be made over to the Corporation.

**The Dublin Corporation** intend to borrow 100,000*l.* for paving streets in the city, having a length of 11½ miles, and a superficial area of 170,551 yards.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, APRIL 4, 1885.

## ART DECORATION.

THE development of Lincrusta-Walton as an art decoration will receive considerable impetus from the advantages obtained by means of the invention of a process recently patented by Mr. Fredk. Walton, for decorating this beautiful material. Architects and decorators will now be enabled to offer their clients at a nominal additional cost most elegant and artistic effects, such as have hitherto been confined to the wealthier classes, owing to the great expense of skilled manual labour. The process, like most valuable inventions, is very simple, but is much more perfect in its action than handwork, as it cuts out the relief in colours with the greatest precision and accuracy. It does not, however, dispense with the introduction of handwork, where deemed advisable, but can be made subservient to it by preparing the more mechanical parts of the decoration for further and more detailed elaboration by hand afterwards. Messrs. Fredk. Walton & Co. have wisely determined to give the large margin of profit between the new process and that of skilled manual labour to the public, thus enabling them to offer beautiful effects of colour at a very low price in comparison with what they have cost in the past, anticipating their profit on a much larger demand for Lincrusta, which they believe, and we think justly, will be created by means of this improvement. It should be stated that Lincrusta-Walton is washable, practically imperishable, and at once the most sanitary, artistic, and economic material for wall decoration that has yet been produced. The public will not be slow to recognise the great advantages to which we have referred, and we believe that the introduction of the above-mentioned processes will create for Lincrusta-Walton a more largely increased demand. To those who are contemplating decoration, we advise a visit to the company's show-rooms, 9 Berners Street, London, W., as in addition to these improvements the company are producing some new patterns for the coming season of considerable artistic merit, which are worthy of the notice of art connoisseurs.

## LIGHTNING CONDUCTORS.

MR. JOHN JONES, art metal worker, Walker's Croft, near Victoria, Manchester, has one important branch of work in the manufacture and fixing of lightning-conductors, for which he is well known, and for putting up which his workmen go to all parts of the kingdom. Mr. Jones has just completed the work of fitting lightning-conductors to the Wigan and the Bradford Infirmary, Rainford and Chaddesden Halls, and many other public buildings. Mr. Jones's experience as to the efficiency of lightning-conductors is that copper has stood the test as being the most suitable material to be used, and further that the rope and solid band conductors have the preference over all others. The means by which Mr. Jones aims at insuring the efficient working of lightning-conductors is to have

sufficient sectional area in proportion to the length of the conductor, perfect continuity throughout the entire length, and perfect contact at its base with moist earth—or, better, a bed of coke or charcoal. To insure the safety of buildings the conductor must be fixed on its highest or most exposed point. Branch conductors should be used on such other points as are outside the "cone of safety" (being a radius of twice the height of the rod), and connected with the main conductors. All external metal work on the roofs should be connected with the conductors, and care taken to increase the sectional area in order to avoid lateral discharge. An extensive range of buildings should have several main conductors. Mr. Jones's copper wire rope conductors, and his solid copper band conductors, are of various sizes, all approximately proportioned to the height of the building; solid copper points, single, triple, and quintuple, in sizes to suit conductors; elevating rods, connecting pieces, cramps, staples, insulators, &c. The conductors are applied to church spires, factory chimneys, warehouses, mansions, farm buildings, &c. Of course the devising and fixing of lightning conductors necessarily vary with the situation, and should only be carried out by those who are properly qualified to design and place them; for, as was said in one of the "Tesserae" a week or two back by Mr. Highton:—"Knowing from experience the terrific power of lightning, I must still assert that, as a person may be poisoned by an improper application of medicines, so may a building be destroyed, or even human life sacrificed, by an improperly or injuriously erected lightning conductor." It may be noticed, in conclusion, with regard to other work, that Mr. Jones has just fitted up St. Joseph's Church at Sale with gas-fittings to order in iron.

## COMPETITIONS OPEN.

BOOTLE.—May 1.—Plans and Specifications are invited for the proposed Erection of Public Baths. Mr. J. Alexander, Borough Surveyor, Bootle.

WIMBLEDON.—Plans are invited for proposed Free Library. Mr. W. H. Whitfield, 5 Southampton Street, Bloomsbury, W.C.

## CONTRACTS OPEN.

ABERDEEN.—April 4.—For Building Part of Steading of Offices at Wardhead. Mr. James Strachan, Milton, Lumphannan.

ABERDEEN.—April 14.—For Station Building at Brickie, Nether Buckie, Portgordon and Fochabers, on Great North of Scotland Railway. W. Moffatt, Secretary.

AIRDRIE STATION.—April 6.—For Iron Roof, &c. Mr. J. Strain, C.E., 154 West George Street, Glasgow.

ARMAGH.—April 11.—For Fitting Laundry with Steam Engine, Boilers, Drying Closet,

Hydro-extractor, Wringing Machine, &c. Mr. J. Boyd, Architect, 9 Donegall Square West, Belfast.

ARMTHORPE.—April 8.—For Restoring Church. Mr. C. H. Fowler, Architect, The College, Durham.

ATHERSTONE.—April 11.—For Construction of Waterworks (Engine and Boiler-houses, Chimney Shaft, &c., Reservoir) and Supply of Iron Pipes, Engines, Boilers, &c. Mr. Baldwin Latham, C.E., 7 Westminster Chambers, S.W.

BATH.—For Erection of Infant School at Larkhall. Mr. C. Bryan Oliver, Architect, Bath, and 76 Guilford Street, London.

BELFAST.—April 13.—For Building School-house. Mr. Henry Seaver, B.E.; Architect, 35 Royal Avenue, Belfast.

BERMONDSEY.—April 16.—For Additional Water-closets, Lavatories, Bathrooms, and Relief Offices at the Workhouse, Tanner Street. Messrs. H. Saxon Snell & Son, Architects, 22 Southampton Buildings, Chancery Lane.

BICTON.—April 13.—For Building Church. Mr. A. E. Lloyd Oswell, Architect, Dana Chambers, Shrewsbury.

BISHOPSTOKE.—For Building Dwelling-house. Mr. A. W. Galbraith, Architect, 9 Southgate Street, Winchester.

BOURNEMOUTH.—April 14.—For Building on Pierhead 250 feet run of Shelters, &c., Wind Screens of Wrought-iron Girders, Plate-glass, Zinc Roofing and Woodwork, &c. Mr. R. W. Peregrine Birch, C.E., 2 Westminster Chambers, Victoria Street, S.W.

BRADFORD.—April 4.—For Building Wesleyan Sunday-schools. Messrs. Morley & Woodhouse, Architects, 15 Darley Street, Bradford.

BRADFORD.—April 7.—For Construction of a Reservoir at Sedburgh, to hold about 3,000,000 gallons, with Filter Tanks, &c. Messrs. Milner & France, Architects, Swan Arcade, Bradford.

BRADFORD.—April 8.—For Building Eight Houses for the Brick and Tile Co. Mr. R. Calvert, Architect, 9 New Kirkgate, Bradford.

BRIXHAM.—April 8.—For Rebuilding (First Section) Parish Church. Rev. R. Elrington, Vicarage, Brixham.

CARDIFF.—April 16.—For Building Thirty-four Shops with Cellars, Offices, &c. Mr. J. P. Jones, Architect, 27 Park Street, Cardiff.

CHELSEFIELD.—April 16.—For Building Schools, with Master's Residence, &c. Mr. G. St. Pierre Harris, Architect, 1 Basinghall Street, E.C.

CHESTHILL.—April 20.—For Additions and Alterations to Invervar Lodge and Steading. Mr. John Hamilton, Chesthill, Fortingal, N.B.

CORK.—For Building Four Houses, Western Road. Mr. J. F. M'Mullen, C.E., 34 Mary Street, Cork.

CREWKERNE.—April 8.—For Building two Dwelling-houses, with Shops and Business Premises. Messrs. Packham & Croote, Architects, 93 Paris Street, Exeter.

DEWSBURY.—For Building Four Houses and Shop. Mr. F. W. Ridgway, Architect, Church Street, Dewsbury.



**DUNDEE.**—April 4.—For Building Rosebank Public School. Mr. David Maclaren, Architect, 81 Murraygate, Dundee.

**EASTINGTON.**—April 22.—For Works at Parish Church. Messrs. Waller, Son & Wood, Architects, 17 College Green, Gloucester.

**EAST DEREHAM.**—April 10.—For Works to Nave and Aisle Roofs, Warming Parish Church, &c. Mr. E. P. Willins, Architect, Bank Plain, Norwich.

**ELY.**—April 4.—For Supply of Cast-iron Pipes, Sluice Cocks, Engines, Pumps, Boilers, &c., and Building Engine and Boiler House, Coal Store, Chimney Shaft, Cottage, &c. Messrs. Easton & Co., C.E., 11 Delahay Street, Westminster.

**FIFE-KEITH.**—April 8.—For Erection of Buildings for the Institute Company. Mr. F. D. Robertson, Architect, Fife-Keith.

**GALWAY.**—April 15.—For Building Constabulary Barrack. Mr. W. B. Soady, Office of Public Works, Dublin.

**GALWAY.**—April 15.—For Building Post Office. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**GYFFELLON.**—April 6.—For Building Chapel. Mr. Watkin Williams, Hafod.

**HALIFAX.**—April 4.—For Erection of House and Shop at Lee Mount, Ovenden. Messrs. Horsfall & Williams, Architects, Post Office Buildings, Halifax.

**HALIFAX.**—April 9.—For Erection of Shops and Houses at junction of North Bridge and Cross Hills. Messrs. G. Buckley & Sons, Architects, Halifax.

**HASTINGS.**—April 8.—For Two Compound Beam Engines with Surface Condensers, Four Bucket and Plunger Pumps, Set of Three-throw Pumps and Steel Lancashire Boilers. Messrs. Easton & Co., 11 Delahay Street, Westminster.

**HASTINGS.**—April 9.—For Building Row of Shops with Mansions over on the Sea Front. Mr. A. Wells, Architect, 25 Havelock Road, Hastings.

**HEYWOOD.**—April 8.—For Supply of Cast-iron Pipes and Sluice Valves. Mr. J. Diggle, Engineer. Mr. Andrew Waller, Town Clerk.

**HUDDERSFIELD.**—April 8.—For Building Long Chimney and Additions to Central Depot. Mr. R. S. Dugdale, Borough Surveyor, Town Hall, Huddersfield.

**HUDDERSFIELD.**—April 9.—For Alterations and Additions to Springfield, Edgerton. Messrs. J. Kirk & Sons, Architects, Huddersfield.

**HULL.**—April 16.—For Water Main Piping (2,000 tons). Mr. D. Maxwell, C.E., Town Hall, Hull.

**ILKESTON.**—April 7.—For Brickwork of Retort House and Erection of Retort Beds, Fitting Shop, Chimney Shaft, &c., at Gasworks. Mr. Wright Lissett, Clerk, Town Hall, Ilkeston.

**KEIGHLEY.**—April 8.—For Building Warehouse, Cross Road Mills. Mr. J. Judson, Architect, Bogthorn, Keighley.

**KNARESBOROUGH.**—April 13.—For Taking Down Three Houses and Building New House. Mr. W. Clemshaw, Finkle Street, Knareborough.

**LEEDS.**—April 4.—For Building Eight Houses. Mr. T. Ambler, Architect, 9 Park Place, Leeds.

**LEEDS.**—April 8.—For Alterations to House. Mr. D. Dodgson, Architect, 16 Park Lane, Leeds.

**LEES.**—For Building Bleach Works. Mr. J. Barnes, Architect, Yorkshire Street, Ashton-under-Lyne.

**MANCHESTER.**—April 10.—For Erection of a New Bakehouse, with Flour Store, and also for a New Washhouse, at the Cottage Hospital at the Workhouse, Withington. Messrs. Mangnall & Littlewoods, Architects, 29 Brown Street, Manchester. Mr. W. N. Edgill, Clerk to the Guardians, Charlton.

**MIDHURST.**—For Rebuilding Iping Church. Mr. E. P. Loftus Brock, F.S.A., Architect, 19 Montague Place, Russell Square, W.C.

**POPULAR.**—April 11.—For Building Dwelling-houses for Pier-master and Crew. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**RADNOR.**—April 6.—For Erection of Timber Bridge at Llanbister, according to plans by County Surveyor, Rhayader. Mr. W. Stephens, Shirehall, Presteign.

**REIGATE.**—April 7.—For Building Infectious Hospital and Cottage. Mr. E. Larmer, Architect, High Street, Reigate.

**RICHMOND.**—April 8.—For Building Post Office. H.M. Office of Works, 12 Whitehall Place, S.W.

**ROCHESTER.**—April 4.—For Building Boys' School at Strood. Mr. Richard Pratt, Clerk to the School Board, Eastgate, Rochester.

**RUGELEY.**—April 8.—For Alterations and Additions to Grammar School. Messrs. Radcliffe and Holdsworth, Architects, Birkenhead. Mr. R. Landor, Clerk to Governors, Rugeley.

**SOUTHPORT.**—April 16.—For Erection of School for 489 Children in Swire and Bury Roads, Birkdale. Mr. C. A. Atkinson, Architect, 35A Castle Street, Liverpool. Mr. H. S. Threlfall, Clerk to the School Board.

**SOUTH MILTON.**—April 11.—For Restoration of Church at South Milton. Archdeacon Earle, West Alvington, Kingsbridge.

**OWERBY BRIDGE.**—April 7.—For Erection of Goods Offices, Lancashire and Yorkshire Railway. Mr. J. H. Stafford, Secretary, Manchester.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**WELLINGTON.**—April 11.—For Laying Cast-iron Pipes, Erection of Pumping Station, Water Tower, with Adit and Well. Mr. E. Pritchard, C.E., 2 Storey's Gate, Westminster.

**WHICKHAM.**—April 6.—For Building Conservatory (to cover 1,500 square yards), Dunstan Hall. Mr. F. R. Wilson, Architect, Alnwick.

**WHICKHAM.**—April 21.—For Billiard-room, Smoke-room, &c., Dunstan Hall. Mr. F. R. Wilson, Architect, Alnwick.

**WIGAN.**—April 6.—For Erection of a new Church at Lower Ince. Messrs. Paley & Austin, Architects, Lancaster.

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**HENRY CONOLLY.**

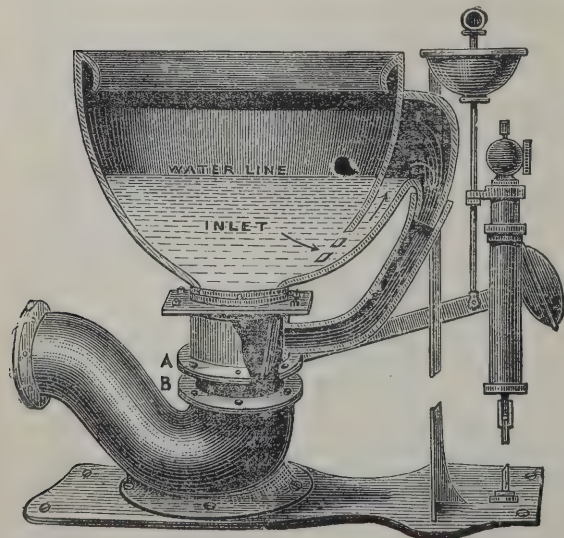
LIMITED,  
MANUFACTURING SANITARY ENGINEERS,

Call the attention of Architects, Surveyors, and Builders to their Closets, the advantages of which will be readily seen by the accompanying Illustration.

**THE "SAFETY" VALVE WATER-CLOSET,**

WITH

Conolly's Reversible Trap (Patent No. 3,754).



This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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**53 & 55 Hampstead Road, 169 & 171 Drummond Street.**  
WAREHOUSES—TOLMERS SQUARE, N.W.



YORK.—April 4.—For Erection of a Flour Warehouse and Offices in Hangate. Mr. W. G. Penty, Architect, Clifford Chambers.

## TENDERS.

### ABERDEEN.

For the Mason and Slater Work and for Wrought-iron Roofs for Additions to the Retort-house and Coal Stores at the Corporation Gas Works, Aberdeen.

#### Mason Work.

|                              |      |    |   |
|------------------------------|------|----|---|
| Bisset & Son                 | £930 | 0  | 0 |
| Milne                        | 878  | 10 | 0 |
| Smith                        | 783  | 0  | 0 |
| Gordon                       | 600  | 0  | 0 |
| J. & J. Ross                 | 598  | 0  | 0 |
| Gall & Walker                | 495  | 13 | 0 |
| PRINGLE & SLESSOR (accepted) | 489  | 0  | 0 |

#### Plumber and Slater Work.

|                     |      |    |   |
|---------------------|------|----|---|
| Adam                | £500 | 0  | 0 |
| Currie              | 500  | 0  | 0 |
| Milne               | 480  | 0  | 0 |
| M'Gregor & Shand    | 456  | 0  | 0 |
| Merson              | 451  | 13 | 9 |
| Murray              | 435  | 0  | 0 |
| Pirie, Justice      | 429  | 0  | 0 |
| DAVIDSON (accepted) | 373  | 0  | 0 |

#### Wrought-iron Roofs.

|                                 |        |    |   |
|---------------------------------|--------|----|---|
| Airdrie Iron Company            | £1,876 | 0  | 0 |
| Abernethy & Co.                 | 1,580  | 0  | 0 |
| Brodie & Co., Paisley           | 1,365  | 0  | 0 |
| P. & W. MacLellan, Glasgow      | 1,350  | 0  | 0 |
| Hanna, Donald & Wilson, Paisley | 1,130  | 0  | 0 |
| BLAIKIE BROS. (accepted)        | 1,054  | 10 | 8 |

Remainder of Aberdeen.

### ATHERSTONE.

For Excavation and Construction of Brick Gas-holder Tank, Atherstone.

|                                  |      |   |   |
|----------------------------------|------|---|---|
| Knight, Northfleet               | £750 | 0 | 0 |
| Corrie & Miles, Wolverton        | 650  | 0 | 0 |
| Cohen, Northampton               | 512  | 8 | 6 |
| Frayne, Stourport                | 411  | 5 | 2 |
| Fox & SON, Atherstone (accepted) | 357  | 2 | 6 |

### BIRKENHEAD.

For Building Insane Wards at the Workhouse, Church Road, Tranmere, for the Guardians of Birkenhead Union. Messrs. HOLT & WISE, Architects, 4 Water Street, Liverpool.

|                                 |      |   |   |
|---------------------------------|------|---|---|
| Hamilton                        | £606 | 0 | 0 |
| Jones, Everton                  | 588  | 0 | 0 |
| Wearing                         | 564  | 0 | 0 |
| Ritchie                         | 561  | 0 | 0 |
| Snake                           | 538  | 0 | 0 |
| Forde                           | 527  | 0 | 0 |
| Bleakley & Son                  | 520  | 0 | 0 |
| Macdonald, Bootle               | 518  | 0 | 0 |
| MUNNERLEY, Bebington (accepted) | 503  | 0 | 0 |

Remainder of Birkenhead.

### BRIGHOUSE.

For the Erection of a Store and Six Houses at Rastrick, for the Brighthouse Industrial Society. Mr. R. F. ROGERSON, Architect, Brighthouse.

#### Accepted Tenders.

|  |      |    |   |
|--|------|----|---|
| Fearnley, Brighthouse, mason                   | £763 | 0  | 0 |
| Bentley, Rastrick, joiner                      | 230  | 0  | 0 |
| Smithies, Brighthouse, slater                  | 96   | 15 | 0 |
| Brook, Heckmondwike, plumber                   | 64   | 14 | 0 |
| Anderson & Hynes, Brighthouse, plasterer       | 39   | 10 | 0 |
| Beckwith Bros., Brighthouse, white-smith       | 38   | 10 | 0 |
| Hinchcliffe & Hainsworth, North-woram, painter | 32   | 0  | 0 |
| C. & J. Street, Bowling, revolving shutters    | 11   | 0  | 0 |

### BURNLEY.

For Wood-block Flooring for Vagrant Wards, Union Workhouse.

Geary & Walker, Manchester.

### CASTLETON.

For Erection of Stone Fence, with Iron Palisade, in front of the Castleton Congregational Church, and the Relaying of the School-room Floor.

|                       |      |   |   |
|-----------------------|------|---|---|
| Pollitt, Heywood      | £201 | 5 | 0 |
| Holt, Castleton       |      |   |   |
| Taylor, Heywood       |      |   |   |
| Diggle Bros., Heywood |      |   |   |

### CHATHAM.

For Repairs to St. Bartholomew's Hospital, Chatham.

|                             |      |    |   |
|-----------------------------|------|----|---|
| H. & J. BATHURST (accepted) | £252 | 18 | 6 |
|-----------------------------|------|----|---|

For Carrying Out Underground Drainage and Plumbing-work at the St. Bartholomew's Hospital, Chatham.

PYE, East Malling (per schedule).

### CHELMSFORD.

For Erection of a New Billiard-room, &c., for Chelmsford Club.

|                         |      |    |   |
|-------------------------|------|----|---|
| Gozzett, Woodham Walter | £595 | 0  | 0 |
| Choat                   | 574  | 0  | 0 |
| Saltmarsh               | 543  | 0  | 0 |
| Crompton & Fawkes       | 524  | 10 | 0 |
| Wood                    | 517  | 0  | 0 |
| Moss (accepted)         | 439  | 0  | 0 |

### CHESHUNT.

For Building Two Dwelling-houses, Shops, and Outbuildings at Crossbrook Street, Cheshunt.

|                                  |        |   |   |
|----------------------------------|--------|---|---|
| Sanders, Cheshunt                | £1,631 | 0 | 0 |
| White, Enfield                   | 1,565  | 0 | 0 |
| Bunce, Cheshunt                  | 1,460  | 0 | 0 |
| Archer, Cheshunt                 | 1,455  | 0 | 0 |
| Hart, Tottenham                  | 1,332  | 0 | 0 |
| Lawrence, Waltham Abbey          | 1,331  | 0 | 0 |
| Boswell, Enfield (part accepted) | 1,223  | 1 | 0 |
| Holding                          | 1,010  | 0 | 0 |

### COLCHESTER.

For Building Cottage in Mersea Road, Colchester, for Mr. R. Salmon. Mr. G. H. PAGE, Architect, Colchester.

|                     |      |    |   |
|---------------------|------|----|---|
| Eade                | £168 | 0  | 0 |
| Harden              | 167  | 10 | 0 |
| Ambrose             | 164  | 0  | 0 |
| Bowles              | 149  | 18 | 6 |
| Chambers            | 149  | 0  | 0 |
| Pitt                | 147  | 0  | 0 |
| GLADWELL (accepted) | 137  | 0  | 0 |

For Alterations to Premises in Priory Street, Colchester. Mr. G. H. PAGE, Architect, Colchester.

|                   |     |   |   |
|-------------------|-----|---|---|
| Gladwell          | £69 | 0 | 0 |
| HARDEN (accepted) | 67  | 0 | 0 |

# STAINS FOR WOOD FLOORS.

LIGHT OAK.

Applied to Ordinary Deal gives an exact imitation of Old Polished Oak Floors.

IMMENSE SAVING IN THEIR USE,

As no size or varnish is required, the application of one coat only taking the place of two coats of size, one of stain, and one of varnish by the ordinary process.

INVALUABLE FOR THE BORDERS OF ROOMS,

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Dr. Koch, in a recent lecture on Cholera, stated that polishing and dry-rubbing floors was a greater protection than washing floors. Prices, 10s. 6d. per gallon; 6s. 6d. per half-gallon; 4s. per quart. Half a gallon will do a 3-foot border round a large room.

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|                   |           |
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| Interest          | 121,000   |
| Accumulated Funds | 2,892,000 |

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H.R.H. THE PRINCE OF WALES.  
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## ENFIELD.

|   |            |
|---|------------|
| For Erection of Additional Vestry, &c., at Christ Church, Enfield. Mr. W. D. Church, Architect. |            |
| Patman  | £1,319 0 0 |
| Thompson  | 1,295 0 0  |
| Steel Bros.   | 1,199 0 0  |
| Richardson  | 1,198 0 0  |
| Shurmer   | 1,188 0 0  |
| Staines & Son   | 1,166 0 0  |
| Fairhead  | 1,079 0 0  |
| Mills   | 1,057 0 0  |
| Tinson  | 998 0 0    |

## FOLESHILL.

|  |          |
|--|----------|
| For Extension of Walls and Playgrounds, Edgewick Schools, Foleshill. |          |
| Frith, Coventry  | £127 9 0 |
| Goode, Foxford   | 75 10 0  |
| Kelly, Foleshill   | 71 0 0   |
| Lester, Coventry   | 62 0 0   |
| Isaac, Foleshill   | 61 10 0  |
| Jephcott, Foleshill  | 57 10 0  |
| MAKEPEACE, Coventry (accepted)                                       | 49 0 0   |

## GAINSBOROUGH.

|  |            |
|--|------------|
| For Sinking Artesian Well, 650 feet deep, for the Local Board, Gainsborough. |            |
| TIMMINS, Runcorn (accepted)  | £2,433 0 0 |

## HALIFAX.

|  |           |
|--|-----------|
| For Alterations and Additions to Five Dwelling-houses adjoining New Cattle Market, Hanson Lane, Halifax. |           |
| Robinson   | £327 16 0 |
| Halford  | 309 0 9   |
| Dyson & Son  | 308 5 0   |
| Fleming  | 305 0 0   |
| Naylor   | 297 10 9  |
| Hopkinson  | 297 6 0   |
| Games  | 286 12 0  |
| Jenkinson  | 285 12 9  |
| Darnes   | 285 5 11  |
| Noble  | 267 9 5   |
| PICKLET (accepted)   | 265 9 0   |
| Engineer's estimate  | 287 8 5   |

All of Halifax.

|   |  |
|---|--|
| For Sinking a Bore-hole in a Quarry on Greetland Moor. Messrs. JACKSON & FOX, Surveyors, 22 George Street, Halifax. |  |
| SLATER, Halifax (accepted).   |  |

## HALIFAX—continued.

|  |  |
|--|--|
| For Additions to Residence, Heathfield Place, Halifax. Mr. T. L. PATCHETT, Architect, Halifax. |  |
| Hopkinson, King's Cross, near Halifax, mason and bricklayer.                                   |  |
| Lomas, Salterhebble, near Halifax, carpenter and joiner.                                       |  |
| Naylor, Halifax, plumber and glazier.  |  |
| Blackburn, Halifax, plasterer and slater.  |  |

## For Street Improvement Works.

## Wadsworth Street.

|   |          |
|---|----------|
| Hodson, 6 Greenmount Terrace              | £95 15 0 |
| Dewhurst, Amos Street                     | 74 15 0  |
| Kendall, Lower Shaw Hill                  | 68 7 6   |
| D. Bedford, Parkinson Lane                | 68 7 3   |
| Darnes & Son, Siddall                     | 66 8 2   |
| Hudson, Boothtown                         | 64 9 6   |
| S. Bedford, King's Cross                  | 63 12 10 |
| Mann, Green Hill Terrace                  | 61 2 8   |
| G. & H. TYSON, 39 North Parade (accepted) | 60 1 2   |
| Engineer's estimate                       | 64 4 6   |

## Haigh Street.

|                          |         |
|--------------------------|---------|
| Hodson                   | 105 0 0 |
| Dewhurst                 | 65 17 7 |
| D. Bedford               | 64 9 7  |
| Kendall                  | 64 9 1  |
| Darnes & Sons            | 62 11 8 |
| S. Bedford               | 59 19 6 |
| Hudson                   | 58 19 3 |
| Mann                     | 57 19 0 |
| G. & H. TYSON (accepted) | 57 12 3 |
| Engineer's estimate      | 58 9 2  |

## Miall Street.

|                          |          |
|--------------------------|----------|
| Hodson                   | 114 10 0 |
| Kendall                  | 74 1 8   |
| Dewhurst                 | 73 19 2  |
| Hudson                   | 73 3 4   |
| Darnes & Son             | 71 7 11  |
| D. Bedford               | 71 5 5   |
| S. Bedford               | 65 16 8  |
| Mann                     | 65 9 2   |
| G. & H. TYSON (accepted) | 64 3 4   |
| Engineer's estimate      | 67 10 10 |

All of Halifax.

## HALIFAX—continued.

|   |           |
|---|-----------|
| For Works of Improvement of Bedford Street North, Halifax. Mr. EDWARD R. S. ESCOTT, Surveyor. |           |
| Hopkinson   | £120 12 4 |
| Hooson  | 114 16 0  |
| Dewhurst  | 110 1 4   |
| Hudson  | 95 7 6    |
| Kendall   | 89 12 10  |
| Bedford   | 85 19 2   |
| Mann  | 78 0 4    |
| G. & H. TYSON (accepted)  | 71 14 2   |

|  |  |
|--|--|
| For Taking Down and Re-erecting Beerhouse and House and Shop, at Luddenden Foot. Messrs. JACKSON & FOX, Architects, 22 George Street, Halifax. |  |
|--|--|

## Accepted Tenders.

|   |           |
|---|-----------|
| Wilkinson, Mytholmroyd, mason and excavator         | £275 13 6 |
| J. & S. Murgatroyd, Luddenden, carpenter and joiner | 190 0 0   |
| Taylor, Ovenden, slater and plasterer               | 73 0 0    |
| Greenwood, Mytholmroyd, plumber and glazier         | 32 16 0   |

## HEYWOOD (LANCS.).

|  |  |
|--|--|
| For Building Retaining and Fence Walls, &c., in connection with Construction of Reservoir, Clay Lane, Spotland. Mr. J. DIGGLE, Borough Engineer, Municipal Buildings, Heywood. |  |
|--|--|

## BEAVER, Stalybridge (accepted).

Thirteen Tenders received.

## HANLEY.

|  |          |
|--|----------|
| For Additions to Premises, Miles Bank, Hanley, for Messrs. McIlroy Bros. Mr. GEO. W. BRADFORD, Architect, Hanley. Quantities by the Architect. |          |
| Gallimore, Newcastle   | £594 0 0 |
| Ellis, Hanley  | 587 0 0  |
| Godwin, Hanley   | 571 0 0  |
| BARLOW, Stoke-upon-Trent (accepted)  | 558 0 0  |
| Bowden, Burslem  | 550 0 0  |
| Cornes, Hanley   | 550 0 0  |

**EXAMINATION UNDER THE METROPOLITAN BUILDING ACT (18 & 19 Vict. cap. 122, sec. xxxii.), and under the Acts of Parliament, &c.—The Board of Examiners appointed by the Royal Institute of British Architects to examine all persons presenting themselves for that purpose as to their competency to perform the duties of DISTRICT SURVEYOR in London, and of BUILDING SURVEYOR under local authorities, and to grant Certificates to Candidates desiring of the same, will hold an Examination on the 23rd and 24th instant. Each Candidate must on or before Friday, the 17th instant, send to the undersigned an Application drawn upon a form to be previously obtained from them; and each Candidate will be required to attend at the Royal Institute of British Architects on Thursday, the 23rd instant, from 10 A.M. until 1 P.M., and from 2 P.M. until 5 P.M., for the WRITTEN AND GRAPHIC Examination; and on Friday, the 24th instant, at 12 noon, for the ORAL Examination. Each Candidate on sending in his formal Statement and Application must pay to the Royal Institute of British Architects a fee of TWO GUINEAS; and each Candidate on receiving his Certificate, should the same be granted to him, must pay to the Institute a further sum of THREE GUINEAS. The Questions, written and graphic, set at these Examinations are not published.**

J. MACVICAR ANDERSON, Hon. Secretary.

WILLIAM H. WHITE, Secretary.

Royal Institute of British Architects, 9 Conduit Street, Hanover Square, London, W.  
April 2, 1885.ARCHITECTURAL ASSOCIATION,  
9 CONDUIT STREET, W.

The Annual Soiree will take place on Thursday, April 9, at the Westminster Town Hall, Caxton Street, Victoria Street, commencing at 7.30 P.M.

The Sixth Saturday Afternoon Visit will be made on April 11 to the Northumberland Avenue Hotel (Messrs. Lucas &amp; Florence, Architects).

Members to assemble at the Building at 3 P.M.

W. H. ATKIN BERRY, } Hon. Secs.  
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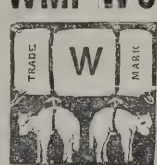
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GRUNDY'S PATENT  
WARM-AIR  
VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

## TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

Yours, &amp;c.

"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,  
July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington,  
Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From E. J. Yates, Esq., Architect, Birmingham.  
"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City  
Road, London.  
Works—TYLDESLEY, near MANCHESTER.



**HANLEY—continued.**

|   |        |     |
|---|--------|-----|
| For Rebuilding the Traveller's Rest and<br>Borough Dining-rooms, Miles Bank,<br>Hanley, for Mr. J. Bates. Mr. GEO. W.<br>BRADFORD, Architect, Hanley. Quantities<br>by the Architect. |        |     |
| Ellis, Hanley   | £2,084 | 0 0 |
| Gallimore, Newcastle  | 2,045  | 0 0 |
| Bradney & Co., Wolverhampton  | 1,980  | 0 0 |
| CORNES, Hanley (accepted)   | 1,925  | 0 0 |
| Bromage, Fenton, Staff.   | 1,900  | 0 0 |
| Bowden, Burslem   | 1,870  | 0 0 |

**HOWDEN.**

|  |        |      |
|--|--------|------|
| For Execution of Drainage Works for Sanitary<br>Authority. |        |      |
| Smith, Newcastle   | £2,666 | 6 1  |
| Jackson Bros., Goole                                       | 2,600  | 0 0  |
| Turner & Sons, Heywood                                     | 2,123  | 5 10 |

**LAYHAM**

|  |        |      |
|--|--------|------|
| For Alterations and Additions to the Rectory<br>House, Layham. Mr. W. M. FAWCETT,<br>M.A., Architect, 1 Silver Street, Cambridge.<br>Quantities by Mr. David Bland, Chesterton<br>Road, Cambridge. |        |      |
| Jennings, Sudbury  | £1,208 | 4 3  |
| Capon, Manningtree   | 1,133  | 4 8  |
| Grimwood & Sons, Sudbury   | 999    | 12 6 |
| Hawkins, Monks Eleigh  | 950    | 17 5 |

**LIVERPOOL.**

|  |  |  |
|--|--|--|
| For Wood-block Flooring for Basement of New<br>Premises. |  |  |
| Geary & Walker, Manchester.                              |  |  |

**LONDON.**

|   |        |     |
|---|--------|-----|
| For Erection of Two Houses in Gray's Inn Road.<br>Mr. W. ANSELL, Architect. |        |     |
| Patman & Fotheringham   | £3,362 | 0 0 |
| Brass & Son   | 3,280  | 0 0 |
| Anley   | 3,260  | 0 0 |
| Lawrance & Son  | 3,228  | 0 0 |
| Macey & Son   | 3,131  | 0 0 |
| Scrivenor & Co.   | 3,109  | 0 0 |
| Downs   | 3,037  | 0 0 |
| Shurmur   | 2,988  | 0 0 |
| Godden  | 2,893  | 0 0 |

**LONDON—continued.**

For Building Stable Shed, and Alterations to  
Gateway House, situate at Estcourt Road,  
Fulham, for the London General Omnibus  
Company, under the Superintendence of  
Mr. G. T. LANHAM. Quantities by Mr.  
Bolton, Lincoln's Inn Fields.

|                   | Stables.   | House.   |
|-------------------|------------|----------|
| Hack              | £1,093 0 0 | £205 0 0 |
| North Bros.       | 997 0 0    | 155 0 0  |
| Jackson & Todd    | 975 0 0    | 195 0 0  |
| Haynes            | 970 0 0    | 100 0 0  |
| Evans             | 954 0 0    | 144 0 0  |
| Richens & Mount   | 932 0 0    | 163 0 0  |
| Hunt              | 899 0 0    | 177 0 0  |
| Howell & Son      | 890 0 0    | 175 0 0  |
| Garrud            | 879 15 6   | 197 17 0 |
| Parker            | 886 0 0    | 139 0 0  |
| Knight            | 870 0 0    | 150 0 0  |
| Aldridge & Jenvey | 815 0 0    | 118 5 0  |
| Dearing & Son     | 814 0 0    | 158 10 0 |

For Building Business Premises at Bermondsey  
New Road.

|                   |        |     |
|-------------------|--------|-----|
| Canning & Mullins | £2,317 | 0 0 |
| Lidstone & Son    | 2,080  | 0 0 |
| Shepherd          | 1,850  | 0 0 |
| Battley           | 1,849  | 0 0 |

For Repairs to be done at the Licensed  
Victuallers' Asylum, Asylum Road, Old  
Kent Road. Mr. W. F. POTTER, Archi-  
tect.

|                  |      |      |
|------------------|------|------|
| Maskall          | £202 | 10 0 |
| Walesby          | 254  | 0 0  |
| Buckle           | 200  | 0 0  |
| Cook             | 188  | 0 0  |
| Hayworth & Sons  | 175  | 0 0  |
| Dearing & Son    | 157  | 0 0  |
| F. & C. Hersee   | 154  | 0 0  |
| WYTHE (accepted) | 115  | 0 0  |

All of London.

For Heating Conservatory and Corridor, Werring-  
ton Park, Launceston, Cornwall.

J. L. BACON & Co., London (accepted).

For Heating the Premises of the Patriotic  
Assurance Company of Ireland, Dublin.  
J. L. BACON & Co., London (accepted).

**LONDON—continued.**

For Stabling, &c., situate at Hurlingham Lane,  
Fulham, for the London General Omnibus  
Company, under the Superintendence of  
Mr. G. T. LANHAM. Quantities by Mr.  
Bolton.

|                          |        |      |
|--------------------------|--------|------|
| Jackson & Todd           | £1,100 | 0 0  |
| Haynes                   | 1,025  | 0 0  |
| Richens & Mount          | 982    | 0 0  |
| Aldridge & Jenvey        | 965    | 0 0  |
| Garrud                   | 951    | 17 0 |
| Evans                    | 939    | 0 0  |
| Howell & Son             | 937    | 0 0  |
| Parker                   | 935    | 0 0  |
| Knight                   | 902    | 0 0  |
| HUNT (accepted)          | 886    | 0 0  |
| Dearing & Son (declined) | 871    | 9 0  |

For New Offices and Additions to Factory, for  
Messrs. Barrett & Co. (Limited), Vauxhall.  
(Contract No. 3.) Mr. EDWARD RAWLINGS,  
Architect, 3 Victoria Street, Westminster  
Abbey. Quantities by Mr. Morris Evans,  
7 John Street, Adelphi.

|                      |      |     |
|----------------------|------|-----|
| Dickinson            | £900 | 0 0 |
| Fish, Prestige & Co. | 795  | 0 0 |
| H. & E. Lea          | 780  | 0 0 |
| Stephenson           | 748  | 0 0 |
| Higgs                | 720  | 0 0 |

For Alterations to the Boar's Head, 66 Fleet  
Street, E.C., for Mr. T. Weatherly. Mr.  
R. A. LEWCOCK, Architect, 88 Bishopsgate  
Street Within, E.C.

|                  |        |     |
|------------------|--------|-----|
| Colls            | £1,400 | 0 0 |
| Kebbell & Nelson | 1,399  | 0 0 |
| Man              | 1,176  | 0 0 |
| Shurmur          | 1,143  | 0 0 |
| Godden           | 950    | 0 0 |
| Jackson & Todd   | 919    | 0 0 |

For Erecting Business Premises, Nos. 8, 9, 10,  
11, and 12 Lovell's Court, Paternoster Row.  
Mr. W. H. SCRYMGOUR, Architect, 50 Lin-  
coln's Inn Fields.

|                   |        |     |
|-------------------|--------|-----|
| Shepherd          | £6,844 | 0 0 |
| Turtle & Appleton | 6,750  | 0 0 |
| Barrie Bros.      | 6,697  | 0 0 |
| Nightingale       | 6,683  | 0 0 |
| Anley             | 6,550  | 0 0 |

## TO THE ARCHITECTS OF THE UNITED KINGDOM.

**MR. FREDERICK HENRY SMITH, of No. 52 Queen Victoria Street, E.C.,**

INVENTOR, PATENTEE, AND SOLE PROPRIETOR OF THE PATENT AUTOMATIC ASPIRATOR SYSTEM  
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Finding it beyond his power to attend to the many applications to apply his System of Ventilation in so many different parts of the country, without increasing his Staff, has been advised by an eminent Architect to appoint Agencies in the Counties of the United Kingdom, whose duty it will be to prepare Plans, Specifications, and Estimates, and to superintend all works where the Syphonic Aspirator System may be applied.

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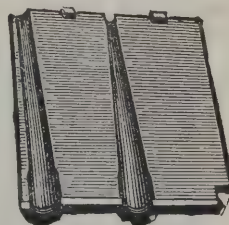
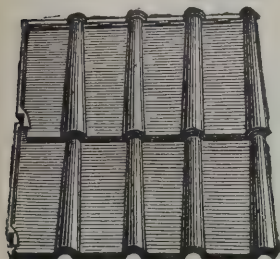
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**LONDON—continued.**

For Self-acting Wood-revolving Screen, for Division of Room, 390 Oxford Street, London, W.

HODKINSON & CLARKE (Limited), Canada Works, Small Heath, Birmingham (accepted).

For Erection of Turkish Baths, Earl's Court Gardens, Earl's Court, London, S.W., for Mr. Thomas. Messrs. T. L. BANKS & TOWNSEND, Architects. Quantities by Mr. J. Sargeant.

*Baths.*

|                             |            |
|-----------------------------|------------|
| Richards . . . . .          | £1,183 0 0 |
| Beale & Son . . . . .       | 871 0 0    |
| Lucas & Son . . . . .       | 855 0 0    |
| Maton . . . . .             | 833 0 0    |
| Turtle & Appleton . . . . . | 795 0 0    |
| H. Smith & Son . . . . .    | 759 0 0    |
| Doughty . . . . .           | 757 10 0   |
| W. H. Smith . . . . .       | 757 0 0    |

*Front.*

|                             |          |
|-----------------------------|----------|
| H. Smith & Son . . . . .    | 211 0 0  |
| Lucas & Son . . . . .       | 139 0 0  |
| Richards . . . . .          | 181 0 0  |
| Doughty . . . . .           | 176 10 0 |
| Beale & Son . . . . .       | 161 0 0  |
| Turtle & Appleton . . . . . | 160 0 0  |
| Maton . . . . .             | 160 0 0  |
| W. H. Smith . . . . .       | 148 0 0  |

**MANCHESTER.**

For Building Independent Church at Stand, near Manchester. Mr. J. P. PRITCHETT, Architect, Darlington. Quantities by the Architect.

*Accepted Tenders.*

|  |              |
|--|--------------|
| Beek, Matlock Bridge, mason . . . . .            | £2,703 15 5  |
| Allen, Radcliffe, carpenter and joiner . . . . . | 1,135 10 0   |
| Allen, Radcliffe, painter . . . . .              | 128 0 0      |
| Smith, Radcliffe, slater . . . . .               | 127 0 0      |
| Hilton, Prestwich, plumber . . . . .             | 85 0 0       |
| Atkinson, Newcastle-on-Tyne, glazier . . . . .   | 85 11 6      |
| Allen, Radcliffe, plasterer . . . . .            | 42 0 0       |
| Total . . . . .                                  | £4,306 16 11 |

**MILTON.**

For Supply of Road Materials, for the South Stirlingshire District. Mr. G. HORNE, Surveyor, New Mills, Milton-of-Campsie.

|   |           |
|---|-----------|
| W. & D. NEITSON, Glasgow (accepted) . . . . . | £369 19 0 |
| A. & J. Faill, Glasgow . . . . .              | 355 12 6  |
| Stark & Sons, Auchinstary . . . . .           | 288 13 9  |
| Aitkin, Sandyknowes . . . . .                 | 73 15 0   |
| Barrie, Lennoxtown . . . . .                  | 63 15 0   |
| Wilson, Croy . . . . .                        | 15 12 0   |

**OLDHAM.**

For Building Carriage Shed for Messrs. Preston & Ward, King Street, Oldham. Quantities by Mr. Harold Cheetham, Oldham.

|                             |          |
|-----------------------------|----------|
| Jackson & Randall . . . . . | £960 0 0 |
| Lees . . . . .              | 955 0 0  |
| Turner . . . . .            | 930 0 0  |
| Ogden Bros. . . . .         | 925 0 0  |
| Wrigley Bros. . . . .       | 892 0 0  |
| Mallalieu & Milne . . . . . | 869 0 0  |
| Stephenson . . . . .        | 840 0 0  |

No tender has been accepted.

**SITTINGBOURNE.**

For Self-acting Oak Revolving Shutters, for Private House. Mr. GEO. PAVEY, Builder, Sittingbourne.

HODKINSON & CLARKE (Limited) Canada Works, Small Heath, Birmingham (accepted).

**STAINFORTH.**

For Building Cemetery Chapel, Lodge, Boundary Walls, with Gates, Iron Fencing, Laying out Roads and Paths, &c., Stainforth. Mr. EDWIN DOLBY, Architect.

|  |          |
|--|----------|
| Sprakes, Thorne . . . . .                | £875 0 0 |
| Harrison . . . . .                       | 774 0 0  |
| Cooke . . . . .                          | 771 0 0  |
| Reed, Barnby Dan . . . . .               | 736 3 9  |
| Smith & Son, Thorne . . . . .            | 685 0 0  |
| Lee Bros., Stainforth . . . . .          | 602 10 0 |
| Johnson, Doncaster . . . . .             | 600 0 0  |
| Wortley, Doncaster . . . . .             | 587 10 6 |
| Athron Bros. & Gill, Doncaster . . . . . | 580 0 0  |
| ANLAY, Doncaster (accepted) . . . . .    | 539 17 0 |
| Middleton . . . . .                      | 517 10 0 |

**SOUTHSEA.**

For Self-acting Patent Early English Revolving Shutters, for New Shops at Marmion Road, Southsea.

HODKINSON & CLARKE (Limited), Canada Works, Small Heath, Birmingham (accepted).

**ST. OSYTH.**

For Sewerage Work, St. Osyth. Mr. G. H. SASSE, Surveyor, Thorpe-le-Soken.

|                                       |          |
|---------------------------------------|----------|
| Hook, Clacton-on-Sea . . . . .        | £130 4 4 |
| Canham, Weeley . . . . .              | 98 12 0  |
| PAGE, St. Osyth (accepted) . . . . .  | 97 10 0  |
| Gillingham, Clacton-on-Sea . . . . .  | 97 0 0   |
| Eade, Upper Kirkby-le-Soken . . . . . | 87 0 0   |
| Surveyor's estimate . . . . .         | 99 14 3  |

**SUTTON.**

For Pair of Houses, Brunswick Road, Sutton, Surrey. Mr. HERBERT D. APPLETON, A.R.I.B.A., Architect, The Wool Exchange, E.C.

ROBINSON (accepted) . . . . . £1,085 0 0

**SWANSEA.**

For Self-acting Oak Revolving Shutters, for Craig y Nos Castle, South Wales.

HODKINSON & CLARKE (Limited), Canada Works, Small Heath, Birmingham (accepted).

**TWICKENHAM.**

For Supply and Erection of 662 feet of Iron Post and One-bar Railing, for the Twickenham Local Board. Mr. RAMSEY, Surveyor. South Western Iron Works Co. . . . . £145 6 0

|                                  |          |
|----------------------------------|----------|
| Pedlar . . . . .                 | 104 16 6 |
| St. Pancras Iron Co. . . . .     | 95 0 0   |
| Cooper & Sons . . . . .          | 92 0 0   |
| Slade . . . . .                  | 84 0 0   |
| Franklin & Sons . . . . .        | 78 0 0   |
| Sansom Bros. . . . .             | 77 13 7  |
| Slater & Oliver . . . . .        | 74 14 0  |
| Codham & Co. . . . .             | 69 0 0   |
| Phelps . . . . .                 | 69 0 0   |
| Reynolds & Co. . . . .           | 68 10 0  |
| Guy & Stevens . . . . .          | 65 9 0   |
| Bird & Co. . . . .               | 64 10 0  |
| Badham & Co. . . . .             | 62 7 0   |
| Starkly . . . . .                | 62 0 0   |
| JONES & Co. (accepted) . . . . . | 56 0 0   |

## ARTISTIC ✦ VENTILATION. ✧



## SHARP &amp; CO., Hygienic and Hydraulic Engineers.

## TESTIMONIAL

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

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PRIMROSE & CO. CHURCH ST. SHEFFIELD. **ECLIPSE** PATENT ROOF GLAZING. NO PUTTY, PAINT, ZINC OR OTHER PERISHABLE MATERIAL. IN EXTENSIVE USE FOR RAILWAY STATIONS, MILLS, &c. NO OTHER GLAZING CAN BE WARRANTED INDESTRUCTIBLE. PRIZE MEDAL AWARDS; KENSINGTON, MANCHESTER, LIVERPOOL, DONCASTER 1882.3. THE ONLY GLAZING AWARD. INTERNATIONAL HEALTH EXHIBITION, 1884.



**SOUTH SHIELDS.**

|   |           |
|---|-----------|
| For Piling in the Front of the Quay at the Mill Dam, for the South Shields Corporation. |           |
| Mr. MATTHEW HALL, Borough Engineer.   |           |
| Pinman, South Shields   | £222 10 6 |
| Jackson, Newcastle  | 192 0 0   |
| Lane, South Shields   | 165 0 0   |
| Shotton Bros., North Shields  | 159 2 6   |
| Allison, Sunderland   | 156 0 0   |
| THOMPSON & BROWN, South Shields (accepted)  | 132 0 0   |

**TAUNTON.**

|  |             |
|--|-------------|
| For Enclosing and Fitting the Taunton Show Yard, for the Somersetshire Agricultural Association. Mr. C. H. SAMSON, Architect, Taunton. |             |
| Escott, Bridgwater   | £1,166 13 9 |
| Potter, Taunton  | 676 1 6     |
| Pollard, Bridgwater  | 609 0 0     |
| Handford, Taunton  | 588 11 6    |
| Dinham & Verrier, Taunton  | 545 12 0    |
| ALLEN, Taunton (accepted)  | 493 10 11   |

**WELLINGTON.**

|  |  |
|--|--|
| For Wood-block Flooring at Wrockwardine Schools. |  |
| Geary & Walker, Manchester.                      |  |

**WEST HAM.**

|   |             |
|---|-------------|
| For Construction of Sewage Outfall Works, Silvertown, for the West Ham Local Board. |             |
| Mr. LEWIS ANGELL, C.E., Engineer.   |             |
| Quantities by Messrs. R. L. Curtis & Son.   |             |
| Dierden & Co., London   | £14,414 0 0 |
| Greenwood, Mansfield, Notts.  | 13,800 0 0  |
| Botterill, London   | 12,998 0 0  |
| Munday & Son, London  | 12,675 0 0  |
| Mowlem & Co., London  | 12,485 0 0  |
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| J. W. & J. Neave, Woodford  | 11,936 0 0  |
| Webster, London   | 11,924 0 0  |
| Robson, Snarresbrook  | 11,395 0 0  |
| Adams, London   | 10,998 0 0  |
| Gregar, Stratford   | 10,830 0 0  |
| Chafen, Rotherhithe   | 10,656 0 0  |
| COOKE & Co., Battersea (accepted)   | 10,464 0 0  |

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## BUILDING EXHIBITION AT THE AGRICULTURAL HALL.

THE Building Exhibition at the Agricultural Hall closed on Saturday night last, and with the following notices we propose to conclude our description of the exhibition:—

Frederick Henry Smith, 52 Queen Victoria Street, E.C.

In speaking of the application of the patent automatic syphonic aspirator to buildings, it will be remembered, from the description given in last week's *Architect*, that there are two aspirators of different construction, the one having a jacketted inlet surrounding the outlet for fresh air, the other taking in the same through a tube led into the top plate or outer disc. The aspirator fitted with the jacketted inlet is applicable for such buildings as churches, theatres, or concert-rooms, lecture-halls, and all buildings, in fact, mainly consisting of one large room terminating with roof in open air. An important matter is the applicability of Mr. Smith's system for the ventilation of drains and sewers. Brick shafts, about 4 feet in diameter, should be erected in suitable places—if at the junction of a series of converging sewers, so much the better—carried up high enough to clear the tops of houses, and on the shafts one of Smith's aspirators, with a 2 to 3-feet outlet, which would give a continuous uprush of sewer gas with no down draught. The warmed air from the sewer—seldom less than 52 degrees Fahrenheit—emerging from the outlet would not only draw in through the inlet-pipe the motive deodorising

power which disperses it at once into the outer air, further deodorised and rendered innocuous, but would also keep up a continuous circulation and thus prevent stagnation. The air passing in at the inlet and discharging itself through the annular space, performs a dual function, for whilst assisting in carrying off the foul air, it at the same time acts as a counter check to cold air being drawn down the shaft and forcing the noxious fumes through the street gullies. Special induct air shafts—that is, inlets to bring fresh air into sewers—are quite unnecessary. Sufficient air gains access through the numerous existing inlets. The uses, however, to which the aspirator may be applied are manifold, but space will not permit of commenting on more than one or two. Drains and soil-pipes should be ventilated separately, and it is unadvisable to ventilate a drain into which others may debouch through the soil-pipe. A drain 9 inches, 6 inches, or 4 inches (the first is as much too large as the last-named is too small for the main drain of any ordinary mansion or private house) is more hermetically sealed than any sewer, therefore an inlet for fresh air to maintain a constant current through it is in this case necessary. A drain syphoned off from its connection with sewer or cesspool, and a 4-inch shaft fitted with an aspirator, with an inlet for fresh air on the house side carried up to the ground level, would effectually prevent any accumulation of impure air in the drain, and, consequently, foul emanations oozing from the inlet grating. A 6-inch house drain seldom runs full-bore; a 9-inch practically never. The ordinary flow through the former is from one to two inches, occasionally half-bore. Sewage flowing through a 6-inch drain does not ordinarily drive air out of open grids or air inlets unless running three-fourth to full-bore; the tendency is rather to work backwards towards the exhaust shaft (which is the long leg of the syphon), and if an aspirator be fitted thereon down-draught is counteracted; and also an air motor provided, which levers up the air products of the drain automatically, working with equal precision in hurricane or calm. In hospitals, infirmaries, &c., owing to sickness

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the causes of vitiation are more abundant than under other circumstances. Mr. Smith's system has been applied to one of the wards of the French Hospital, Lisle Street, Leicester Square, by way of an experiment. Among the points to be noticed there are the purity of the atmosphere in the ward as compared with that of the outside corridors, next the genial temperature—about 68 degrees—and lastly the novelty of bringing in fresh air, no less than the means used for carrying off the vitiated. The former was brought in from the outer air through two iron gratings, one foot square, fixed on the face of the wall, communicating with two square boxes cut in the brickwork, of the same dimensions. With these air-boxes a hollow moulding, which passes round the top of the room leaving a space of 3 inches between it and the wall for the passage of air, is connected. From this moulding four square wooden tubes for the transmission of air down to the air-boxes, 6 inches by 3 inches, are provided, the air-boxes being carried round the room on the floor-level, to correspond with the moulding above. These floor-boxes have an inch cut off from the bottom of the front-plate, to allow of the gradual diffusion of fresh air on the ground-level. In the ceiling are fixed four aspirators from out to out, with 4-inch outlets; the inlets and outlets are carried along and between the joists of the floor above to the outer air, and then connected to two 4-inch vertical pipes. It should have been mentioned that the aspirators are placed directly over the beds of the patients, about 4 feet above their heads, there being two on either side of the room, and these are led into two separate horizontal pipes carried between the joists of the room above. The air in the ward was all that could be desired. A gaselier is kept burning during the night, and the windows have not been opened since the system was first adopted, notwithstanding which, there has been no deterioration in the purity of the atmosphere, and the system has met with the approval of the doctors, nurses, and patients. From what has been said, it may be reasonably concluded that the system may be applied with success to theatres, concert, ball, and lecture-

rooms; to law courts, barracks, &c.; for dormitories, guard-rooms, cells; to conservatories, and also to malt kilns, &c., besides being applicable to railway carriages and other closed vehicles.

J. T. Pennycook & Co.

Messrs. J. T. PENNYCOOK & Co., Wenlock Buildings, 1 Ironmonger Row, E.C., showed Pennycook's patent "Universal" fanlight-opener. The *raison d'être* of the patent is that many schools, churches, hospitals, halls, banks, &c., are now fitted with windows the upper sashes of which only open either by being hinged at the bottom or hung on pivots from the centre, and that architects and builders have found the inconvenience of opening and shutting such upper sashes by means of cords and pulleys when these get disarranged or worn out. In this patent apparatus such complications are dispensed with, and the sash can be opened and shut with perfect ease by the youngest person, even in the face of a strong wind. By a simple arrangement this apparatus is rendered self-sustaining—i.e., by the withdrawal or insertion of a lever handle it is at once either locked or released. The apparatus being constructed of metal is of a lasting and permanent character, and it is also constructed to open a series of sashes or casements at once, either in whole or part. One fanlight opener was shown connected with a burglar alarm. The firm have orders for 1,800 fanlight openers, one single order alone being for 1,500. Improved lightning conductors were also shown. They are in the form of a cable, made from hard drawn square copper wire, which, having sharp edges exposed in all directions, is a good conductor and of great attractive power. The advantage of this form over a solid body will be at once seen, as lightning does not saturate, but travels on surfaces only; while should it strike directly from the cloud on a round smooth surface, it immediately explodes in all directions, just as molten lead will do if dropped from a height on a rounded, smooth or greased surface. This explosion, therefore, endangers everything in proximity to it. To insure additional attractive power, on the top of the conductor are fixed copper

terminal points or vane, also having sharp edges or points, which may, from the height and position of the tower, spire, or chimney stalk, be immersed in the electric cloud. These are used very extensively throughout Scotland, particularly at the dynamite works. The well-known glazing system is also shown.

T. Wilson & Co.

Messrs. T. WILSON & Co., Stowmarket, showed their valuable protected and household alkaline compositions for removing, cleaning, and washing old paint, varnish, &c., without injury to wood or repainting. There is the composition for removing paint, and there is the composition for cleaning; and this latter can be used for cleaning down house fronts, varnished papers, oak furniture, &c., in fact, for all clearing down purposes. The firm hold many testimonials from architects and builders as to the efficacy of the compositions, as also from private gentlemen, as invaluable for use in cleaning up yachts, &c. Specimens were also on view, so that practical proof of the merits of the composition could be seen.

Meakin & Co.

Messrs. MEAKIN & Co., 84 Baker Street, W., showed a full-size model of a window fitted with their patent sash fastener and opener. The apparatus affords a most convenient means of closing the top sashes of large windows, and is specially intended for windows where the ordinary sash-fastener cannot be conveniently reached. The apparatus also automatically looks both sashes when the window is quite closed or left a little open for draughtless ventilation. The patent oilable sash-pullies were also shown—an ingenious application, especially suited for heavy sashes, as they can be lubricated without taking them out of the frames. The patent standard sliding sash was also shown in the form of a handsome plate-glass window, with frame and sash-frames of mahogany. In appearance it is exactly similar to an ordinary window, the sashes moving up and down as usual in their frame; but this frame can be opened inwards, just as the side-lights of green-

## VENETIAN ENAMEL MOSAIC FOR MURAL DECORATION.

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See "Building News," Oct. 12, 1883, in reference to the Mosaic Pictures for the new Church of the Brompton Oratory, executed by this Establishment.

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Patent Gas-Coal Combination RANGES to be seen at WORK at Building Exhibition, Agricultural Hall, from March 16 to 28.

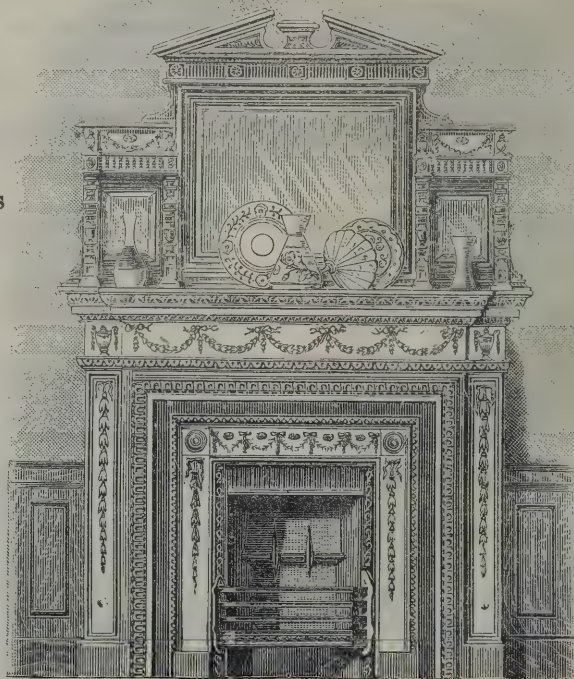
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houses hung on sash centres at their top can be swung open outwards. The outside of the glass can then be cleaned from inside the room, and also when new sash-lines or other repairs are needed no fixed parts have to be removed, and therefore no damage is done to painted work.

*John Smeaton.*

Mr. JOHN SMEATON, Imperial Buildings, Ludgate Circus, E.C., showed his imperial excelsior spray bath, lavatories, door-action urinal, folding urinal, valve-closets, flush-out closets and cisterns, &c. A folding lavatory, on the same principle as the folding urinal, was shown: these being in the wall when closed, there is no obstructive projection beyond the surface of the wall. An excelsior dust-shoot—the same as those fixed at the First Avenue Hotel—was shown, also the patent cast-lead "Eclipse" traps, and many other sanitary appliances and articles relating thereto. Mr. Smeaton's baths, lavatories, closets, &c., are many and various, to suit all purposes, from mansions, &c., to barracks, hospitals, institutions, and the like. Specially designed and elaborate joinery is also found in connection with them. The exhibit at the hall was suggestive of a wide field of work. Besides hot-water and steam apparatus, sunlights, gas arrangements, Mr. Smeaton also fixes the hydraulic rams for hand or horse-power, &c.

*Williams & Nash.*

A handsome collection of marble chimneypieces formed the characteristic feature at the stand of Messrs. WILLIAMS & NASH, of 9 Castle Street, Holborn. On inquiry it was found that one or two were exhibited to show the renovating powers of a certain marble cream much sold by the firm, the use of which restores to marble that has become stained, dirty, smoke-discoloured, &c., its original freshness; these (two) were handsome old statuary marble chimneypieces from a house in Sloane Square. The many other marble chimneypieces and fenders, with handsome tiled hearths and panels and ornamental registers, would not be out of place amidst the richest surroundings.

The firm are entitled to praise for showing a great variety of native marbles in specimen slabs, &c. The most beautiful works may be got by the use of our own Devonshire and Cornish marbles.

*John Matthews.*

Mr. JOHN MATTHEWS, Royal Pottery, Weston-super-Mare, showed Poole's patent bonding-roll square-cornered roofing tiles *in situ*, by means of a little structure which was roofed with the tiles mentioned. The excellence of these tiles consists in their having a bond like slate, being proof against wind stripping and rain drifting, and in being easily put on. Special ridging is furnished. The number of tiles required to cover eleven squares is one thousand, and the weight of a square is  $7\frac{1}{4}$  cwt. The great variety of ornamental and garden pottery was, moreover, a feature of the exhibit, and it is not to be wondered at that amongst his prizes Mr. Matthews has carried off no less than ten silver medals for his excellent garden pottery.

*Hall's Patent Hanging Tiles.*

Mr. HENRY HALL, F.R.I.B.A., of 11 Doughty Street, W.C., the patentee, exhibited the patent hanging tiles. This most useful and ingenious system of tiling, so simple in application for walling purposes, will be found in use all over London—in hotels and restaurants, art galleries and museums, in railway stations and warehouses, in mansions and business offices, also in offices of the Government, besides numerous less pretentious buildings, shops, houses, &c. The tiles are used for facing old or new walls, and partitions in courts, corridors, or areas requiring extra light, or for shops, dairies, larders, &c. They are secured by nails driven into the joints of the brickwork, or in the case of a wooden partition they are nailed to battens or rough boarding, and they may also be fixed to fireproof work of concrete and iron. They are made 9 inches by 3 inches to course with brickwork, and in addition they are now to be had, as was shown at the exhibition, 6 inches by 6 inches, in the form of the square tile we see so often used in shops, dairies, baths, stables,

subways, &c. They may be had glazed white and of various colours, also with patterns stamped or in relief on the face. They are easily fixed by an unskilled workman, cannot fall off, and are not affected by fire or frost. The tiles are well known, and the ingenious way they overlap and conceal the nails, and result in a beautiful smooth wall surface, does not require explaining. Mr. Hall's name as the patentee, moreover, is quite sufficient that in them an article is produced fitted to fulfil the purposes for which it is designed. As to area covered, 1,000 tiles 9 inches by 3 inches cover about 21 yards, 1,000 tiles 6 inches by 6 inches, about 28 yards. Hanging tiles, red and unglazed, were shown at the stand of the Dunton Green Pottery Company, who manufacture them. The patentee has already secured a position at the forthcoming International Inventions' Exhibition (No. 443), where an opportunity of seeing the tiles, and the manner of their attachment, &c., will be again afforded.

*J. F. Ebner.*

Mr. J. F. EBNER, 51 Clerkenwell Road, E.C., showed beautiful specimens of his manufacture, types of which were noticed in the description of the Floral Hall Exhibition, and among the exhibits was a handsome wood dado, part of a general scheme of room decoration being executed. This firm have taken no less than twenty-three gold medals and diplomas of honour at all the chief exhibitions since 1847.

*Dunton Green Brick Works.*

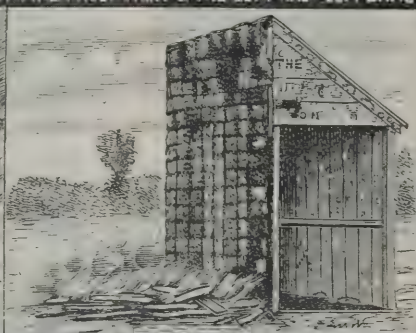
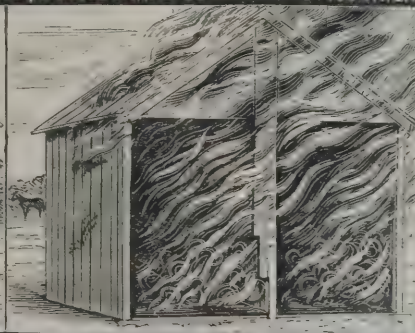
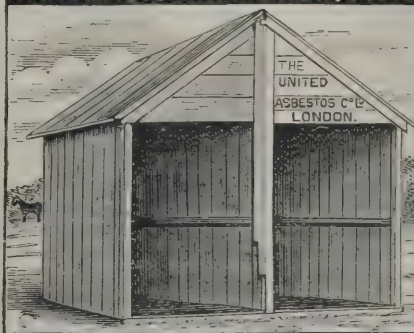
A compact but exhaustive little exhibit of the thoroughly good building materials manufactured at the Dunton Green Gault, Red Brick and Tile Works, Sevenoaks (Mr. E. Breathing, manager), was shown at the stand of this firm, who may be said to be unique in one respect, that they have at their service a peculiarly excellent clay not found in any other part of the country, or indeed in any other part of Kent, a clay which comes out naturally from the fire of a creamy colour. Architects' specifications nearly invariably require it, and it is a speciality the firm are noted for, so that a

## PUBLIC EXPERIMENTS, ROTTERDAM AUGUST 1884

IN PRESENCE OF ALL CHIEF CITY OFFICIALS AND MEMBERS OF GOVMT

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## FIREPROOF PAINT.

Sir FREDERICK BRAMWELL, C.E., F.R.S., Chairman of the Executive Council of the International Inventions' Exhibition, 1885, in referring to the preservation from fire of inflammable building materials, made the following remarks in his Presidential Address at the Institution of Civil Engineers, on January 13th, 1885:—

"The processes, more or less successful, that have been tried are so numerous that I cannot even pretend to enumerate them. I will, however, just mention one, the Asbestos Paint, because it is used to coat the wooden structures of the Inventions' Exhibition. To the employment of this, I think, it is not too much to say those buildings owed their escape, in last year's very dry summer, from being consumed by a fire that broke out in an exhibitor's stand, destroying every object on that stand, but happily not setting the painted woodwork on fire, although it was charred below the surface. I do not pretend to say that surface application can enable wood to resist the effects of a continued exposure to fire, but it does appear that it can prevent its ready ignition."

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better recommendation could hardly be sought for. By the addition of chalk, any kind of clay could be made to come out from a creamy to a perfectly white colour. This clay neither requires nor receives any such addition. Though not found elsewhere, as said before, the particular clay is abundant at the Dunton Green Works, so that the supply is practically inexhaustible. There were shown at this stand the varieties of red and white (cream coloured) facing bricks and moulded bricks, plain and ornamental tiles, ridge, hip, valley and weather angle tiles, finials and terminals, besides garden edging and flower-pots. The brick, tile work, &c., is made in all patterns, moulded, &c. One aim of the firm among others has been to produce what is now so much in demand—a brick that will stand an enormous crushing strain. The red gault paving bricks are in great request for paving side walks. Any purposes or requirements that can be served by brick or tile work are met by the supply of a good durable material. A word of commendation is needed in respect of the smoothness in surface and the fineness of grain which is noticeable throughout. The tiles may be had of a somewhat porous nature, or, on the contrary, of a non-porous character, a tile quite equal to the Broseley or to fireclay machine-made pressed tiles; they, moreover, lie perfectly flat, owing to being manipulated in a dry state. Copings, string-course bricks, or terra-cotta could also be favourably judged of from specimens shown. The firm also are makers of the rebate hanging tiles, patented by Mr. Hall, F.R.I.B.A.

*Archibald Smith & Stevens.*

Messrs. ARCHIBALD SMITH & STEVENS, 48 Leicester Square, W.C., showed the patent (Stevens & Major's) "hydraulic" door spring and check applied to double-action or swing-doors, and also as applied to single-action doors closing into a rebate. This patent is a capital contrivance for closing doors silently and steadily, with or against the wind, without slamming. As seen in action nothing could well be more perfect. You are tempted to suspect that there must be invisibly present one of

the liveried attendants of some grandee, in whose mind hurry in closing a door, much more noise, slamming, violent action, &c., could only be associated with the beginning of chaos. The ordinary swing-door has many disadvantages, and among other things they are liable to catch you in the back, jam the fingers, &c., doing automatically what the railway guard does too often to unlucky travellers. An advantage of the patent is, moreover, that the mechanism is under the floor and makes no outward show. Many specialities were also shown in the way of patent door and window furniture, and ventilating appliances for rooms and buildings, railway carriages, for smoky chimneys, and for soil pipes, &c. Among locks was the patent "Bina'e" locks and furniture (Russell's), and Coale's patent "Levator" locks and furniture. The Binate furniture is made in one solid piece, so that the knobs cannot become detached by wear. The Levator furniture is pendant, and the action of raising it withdraws the latch bolt.

*F. H. Smith.*

A capital invention is to be found in "Smith's Patent Grip," a holdfast for fixing firmly and instantly the cords of Venetian and other blinds, ventilators, tennis nets, and indeed all purposes for which a cord holdfast can be used. It is exhibited by the patentee, Mr. F. H. SMITH, 52 Queen Victoria Street.

*George A. Wright.*

Mr. G. A. WRIGHT, 3 Westminster Chambers, Victoria Street, S.W., showed his patent improved fireproof fixing blocks, an imperishable material which forms a valuable substitute for wood plugging of every description, hitherto placed in walls in order to nail dados, match-boarding, skirting, &c.; or, to speak generally, these blocks may be introduced whenever it is necessary to nail or screw anything to brick, stone, or concrete walls, either in carpenter's, bellhanger's, or gasfitter's work, and they can also be readily snapped or cut with the trowel. They are built in the ordinary bond. In another form they do away with the necessity of putting skirting chocks into, and wood skirting

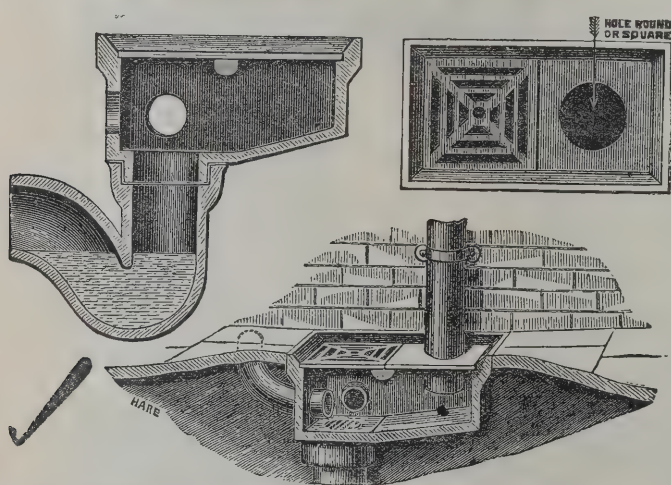
grounds upon walls. They are made for this purpose about three-quarters of an inch wider than ordinary bricks, offering for the plastering a similar, but, from the affinity of the respective materials, a better key than that obtained when using the wood ground. This size block may also be used with great advantage when walls are to be boarded, as in dados, wall-linings, match-boardings, &c., or where battened for lath and plaster, slate, or tile-hanging, &c. Among the names of architects who have lately specified the fireproof fixing blocks of Mr. Wright occur the names of Messrs. Isaacs & Florence, Mr. Ernest C. Lee, &c.

### NOTES ON NOVELTIES.

#### Armstrong's Patent Trapped Automatic Flushing Urinals.

Messrs. J. & M. CRAIG, Long Park Sanitary Pottery Works, Hillhead, Kilmarnock, have introduced an improved patent urinal. The Armstrong patent urinals have been specially designed to facilitate their periodic flushing, and the result is effectively attained in a manner at once most simple and inexpensive. The action is entirely automatic, and after once being set in working order, and the water supply adjusted to secure syphonage at the proper required interval, the process of intermittent flushing goes on with the utmost regularity. While the flush effectually carries everything before it, the apparatus is so constructed that there is always a quantity of clean water left in the basin sufficient to seal the trap (fig. 2), so that gases from the sewer-pipe may be thoroughly excluded and bad smells prevented. Where a constant stream direct from the water-main is not permitted, or where there is weak or irregular pressure, a small quick discharge syphon-cistern, with slight slow after-flush, may be used. This arrangement is found to work most admirably. The connection pipe from cistern to urinal should be not less than  $\frac{3}{4}$ -inch diameter. If the urinal waste discharges into a pipe on which is a non-ventilated trap, an air-pipe should be inserted somewhere between the

## BELLMAN'S PATENT GULLY.



*This Gully possesses the following advantages:—*

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**Avoids all Splashing.**

**Ventilates the Pipes and Trap.**

**Forms Drain for Area or Surface.**

**Is easy of Access for Clearance.**

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

*The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.*

DESCRIPTIVE CIRCULAR ON APPLICATION.

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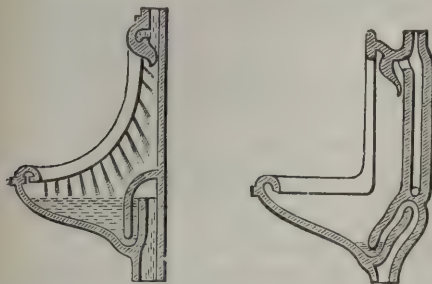
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urinal and the trap. When desired, a treadle arrangement might be adopted, so designed as to operate on the syphon-cistern when the visitor steps off the treadle. The effect of this would be that the basin after having been used would be automatically emptied of its contents,

FIG. 1.

FIG. 2.



refilled, and left fully charged again with clean water (as in fig. 1). This being accomplished automatically, and with perfect certainty and efficiency, such an arrangement must commend itself as invaluable for railway stations and other public places. The same combination of action is not obtained by any other urinal in the market. The inlet to cistern should be as large as possible, so as to allow it to fill quickly. These urinals have been supplied (amongst other places) for several of the stations on the Great Western Railway; the Liverpool Docks; the Prince Alfred Memorial Hospital, Sydney, New South Wales; the new India Government Offices, London; and largely in America.

#### The Unitas.

This appliance, "The Unitas," manufactured by Mr. Thomas Twyford, sanitary potter, Hanley, is a front outlet basin and trap to serve the combined purposes of a water-closet, basin, urinal, and slop sink, with closet, basin, and trap complete. Unlike ordinary water-closet basins, it is not enclosed with woodwork but is fully exposed, so that no filth, nor anything causing offensive smells can accumulate

or escape detection. The outside of basin and trap having raised ornamentation, plain or coloured, the appearance presented is pleasing and artistic. No wood fittings are required except a hinged seat, which being raised, the basin can be used as a urinal or a slop sink, the wetting so objectionable in closets having permanent seats being avoided. Free access can thus be had to all parts of the basin and trap, so that everything about the closet can be easily kept clean. All joints and connections being in sight, any leakage or other defect can be easily detected and remedied. The basin and trap are constructed similar to the "Alliance," which was exhibited with the greatest success at the International Health Exhibition, South Kensington, 1884. The flushing arrangements are such that with a flush of 2 gallons of water, it is guaranteed that all the soil and paper will be completely removed from the basin and through the trap, the whole of the inside of basin being washed and sufficient water left therein to receive soil. It is recommended that this closet be used with a syphon cistern, chain pull and handle, and not less than 1½-inch flushing-pipe.

#### The Torbay Paint Company.

THE TORBAY PAINT COMPANY is a name well known for the quality of the paints they have put before the public for the last 30 years and more. The paints indeed seem to have given universal satisfaction wherever they have been used, and that they have not gone down in public estimation is shown by the continued use of them by the customers of the firm who have once tried them. It will not then be surprising to find that the "polish stains for wood," now brought before the public by the proprietors, Messrs. Stevens & Co., Torbay Paint Company, of Billiter Street, E.C., become universally used as they become known. These stains may be applied to any ordinary deal to produce the appearance of old polished oak, mahogany, and the like. The application of stains to produce in ordinary wood the rich effects of nature, as seen in walnut, rosewood, &c., is not a novelty, so that we are prepared to

hear of some special advantages gained by the use of these new polish stains. Among these advantages may be pointed out a saving not only in the first instance but in the after circumstances. In the first place there is a saving; no size or varnish has to be used. One coat only of stain is applied instead of as in other processes two coats of size, one of stain, and another of varnish. Then there is another saving in durability. For instance, they are of great value for borders of rooms, &c., as they do not scratch like ordinary varnished surfaces. And such borders may be used as well as looked at, for with considerable play of the feet on them by walking, standing on them, &c., the original gloss and finish is retained by an occasional rub up on the part of the housemaid. They, moreover, bring up the grain of the wood without concealing it, while imparting to it rich glossy tints, in exact imitation of the real polished wood, and not with an obtrusive glare like varnished surfaces. They dry quickly, and do not scale off like sized surfaces often do, nor is there the slightest difficulty in their application, as they can be easily put on by unskilled labour. They will be found exceedingly useful as a rich and ornamental margin for rooms, staircases, halls, &c. We may point out the economy in staining or painting the margins of floors, as the price of covering with Brussels carpet three quarters of a yard wide is about 4s. 6d. per square yard, while the cost of staining or painting would be about 1½d. per square yard, thus making a very inexpensive ornament or covering. They may be used for public buildings, asylums, schools, &c., being especially invaluable as a great preventive to contagious diseases; and Dr. Koch, in a recent lecture on the cholera, has stated that washing floors was not nearly so good a preservation as polishing and dry rubbing. They are also useful for wood dados, agricultural machinery, cabinet and joiner's work, and it is quite possible they will be unrivalled for effect, finish, and economy. As to covering powers, this depends somewhat on the porous nature of the wood, but on an average one gallon, it is stated, will cover about 80 square yards, one coat.

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY. VENTILATION WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



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Saturday, April 4, 1885.



# The Architect.

## THE WEEK.

THE important compensation case in which Messrs. SOMMERVILLE & Co., of Greenock, claim 80,077*l.* from the Glasgow and South-Western Railway Company, for losses arising from the construction of an extension line on their property, has been commenced in the local Sheriff Court. The area of the dry grounds and ponds for storing and seasoning timber is about 38,753 square yards, and at 26*s.* or 27*s.* a yard the value amounts to about 50,000*l.* in round numbers. The buildings are put down at 14,000*l.*, and the depreciation of business is estimated at 18,000*l.* The Railway Company offered 55,000*l.* for the whole right and interest in the property. According to the evidence of Mr. R. G. SOMMERVILLE, the profits of the mill rose in one year to 19,764*l.*, and in 1880 they were 13,000*l.* The total profits between 1865 and 1882, after deducting two bad years, was 78,151*l.* 2*s.* 2*d.*, or an average profit for these years of 4,341*l.* 14*s.* 6*d.*

AN exhibition of works which have been rejected at the Royal Academy and the Royal Institute of Painters, is to be opened at the Crystal Palace on May 19. It will not be closed for about six months. Architectural designs, water-colour and other drawings are admissible. They will be conveyed, free of charge, from the exhibitions to Sydenham, and are not to be subjected to further examination by a committee. Other works will be delivered if left at 221-233 Fulham Road, but will have to be submitted to a committee. A commission of 10 per cent. will be charged on works sold during the exhibition. A free non-transferable admission ticket to the palace during the exhibition will be granted to each exhibitor. All pictures and drawings must be in gilt frames. Preference will be given to gilt mounts for water-colours. Oval frames are inadmissible. The honorary secretary of the exhibition is Mr. HENRY VAUGHAN, 60 Finborough Road, S.W. Mr. W. WHITE represents architecture on the committee.

THE contractors for the Forth Bridge have reason to complain of the way they have been impeded by the various local authorities who can claim an interest in the land or water. Instead of considering the work as a public benefit, which it was their duty to aid, they have endeavoured from the first to invent all sorts of petty annoyances, in the hope of screwing money out of the firm. The latest attempt is in relation to the laying down of rails to convey materials along a road at Inverkeithing. A neighbouring landowner says the road is his, the Town Council claim it as theirs, and the contractors are threatened with one of those actions which seem never to come to an end, unless they acknowledge the right of the burgh to the road, which means a similar action from the proprietor for denying his right. Between the two it is difficult to select a course. The contractors have put up staging, and the Town Council wish to have it made over to them. In cases of this kind a despotic authority to control local bodies does seem to be a desirable institution.

THE London Water Companies in 1872 supplied 497,736 houses, for which the sum of 948,277*l.* was paid. In 1883 the houses had increased to 659,249, while the payments rose to 1,505,057*l.* It will be evident that while the increase in the number of houses was 32.4 per cent., the proportion was much greater as regards money, rising from a rental of 948,277*l.* to 1,505,057*l.*, being 58.7 per cent. The Southwark and Vauxhall Company present the most remarkable of the differences. The increase in houses in their district was 27.5 per cent., while the water rentals ascended 73.9 per cent. The explanation given by the companies is that the houses newly erected are for the most part of a superior class; that those rebuilt are generally much larger than those which they replaced; that in many cases, owing to works of public or private improvement, two or three houses have been converted into one; and

that thus, while the number of houses in the most densely populated parts of London has diminished, the value of property has increased commensurately with the increase in size. But the most extraordinary feature of the case is that six out of the eight companies have supplied a less amount of water on an average to a house in 1883 than in 1872. The Southwark and Vauxhall Company, with an increased rental of 76,313*l.*, supplied 168 gallons a day in 1883 against 171 gallons in 1872. The Grand Junction delivered 238 gallons per house in 1883 and 279 in 1872. But the water had evidently become more precious, for while the householders paid 92,168*l.* for the larger quantity, they were compelled to pay 150,015*l.* for a reduced number of gallons. It is not surprising that between 1872 and 1883 the fortunate shareholders were paid eight and a half millions in dividends.

THE exhibition of students' drawings which were shown in the Chiswick School of Art, Bedford Park, this week, was very satisfactory, and creditable to the director, Mr. BURCHETT. The school has not long been opened, and it is too soon to expect that the *esprit de corps* which does so much to supplement a teacher's labours can as yet be influential. But it is evident that the students are making such great efforts to create the spirit that in a short time they must be successful. The teaching has the advantage of retaining whatever is best in the South Kensington system; but many of the qualities of foreign systems are also introduced. If no means had been adopted to bring out the individuality of the students, the school could not exist amidst so many critics as are to be found in Bedford Park. The drawings of the students are a testimony of the thoroughness of the training in the different stages.

THE Artists Corps was distinguished this year at the Easter Review, but that is annual experience. The Commander-in-Chief audibly expressed approval of the appearance of the ranks at the march past. The military correspondent of the *Times*, who met the detachment of the corps under Lieutenant HORSLEY at East Grinstead, has testified to the soldierly bearing of the members. "I was struck," he says, "by the silence and steadiness with which the detachment fell in before recommencing their march. Veterans of the regular army could not have been more quiet and orderly. Indeed, any one looking on might well have thought that the grey-clothed soldiers before him belonged to a regiment of wandering Jews, and had passed their lives on the march. They are of good physique, these Artists, and I learn that few men under 5 feet 6 inches are accepted. Even, indeed, if a candidate is a proper man of his inches, he cannot be enrolled unless recommended formally by a member of the corps. There are several peculiarities about this regiment: one is, that almost all the officers have begun as privates in the corps, and have risen gradually through the different grades of non-commissioned officer; another is, that the corps supplies from its non-commissioned officers a large number of officers for other corps."

A REPORT has been presented to the Senate of the United States on the best way to preserve the Falls of Niagara from further spoliation. It proposes the reservation of several islands and all the points from which the Falls are visible, which are now fenced in and admission charged for entrance. Messrs. MARSH, HALE, and PRATT were named by the Supreme Court as appraisers of this property, and the total sum of their awards is 1,433,000 dols. This appraisal the Supreme Court affirmed. The appraisers examined carefully the claims of riparian owners to rights in the hydraulic power and the bed of the river, for the surrender of which compensation was asked. The owners were prepared to put in claims for 20,000,000 dols. for these water rights, but the appraisers ruled out all such claims except where water power had so long been used as to be a prescriptive right, on the ground that Niagara belongs to the State. The aggregate of the claims presented reached 4,000,000 dols., but the awards were only one-third that amount. The Legislature will now be called upon to appropriate the money to secure the land.



## THE BLESSINGS OF FASHION.

WHATEVER may be the demerits of Queen Anne, the style has been the means of giving an immense amount of work to people in many parts, not only of England, but of the world. We can see proofs of this in any building exhibition like those which were lately held in Covent Garden and Islington. The Gothic Revival did much for trade, and especially in expensive metal work and stained glass. But Queen Anne has given an impetus to the subsidiary arts which, for vigour, has been without precedent. If the things in the exhibitions which owed existence to that style were turned out, very little would be left for the visitors to gaze on. Declare Queen Anne illegal, and the effect would be felt not merely in Birmingham brass works and East End furniture manufactories, but by children who assist in making fans and screens in Japan, and by Indian weavers. Manufacturers are not grateful or they would, before now, have proposed the erection of a statue of Mr. NORMAN SHAW, as a recognition of the advantages which they have been deriving for several years past, and which, directly or indirectly, can be attributed to the revolution which he inspired.

It is only when one considers the importance which is now attached to furniture and decorative appliances that the change in the position held by architecture becomes apparent. Many people at the present day look on the builder's work as little more than a means of displaying manufactures of various kinds. What resident in a suburban terrace cares about the quality of the timber in a door if it contains thick coloured glass which will shed a soft lustre in the hall, or thinks of the thinness of a partition wall if it be covered with a paper that is considered correct? With the aid of terra-cotta, tiles, brass door furniture, a little stained glass, good wall-paper, a couple of carved capitals, electric bells, and paint, it is astonishing how much can be done by a certain class of builders to make houses alluring. If, in addition, there is a sort of guarantee that the sanitary arrangements are of an advanced class, the houses are pretty sure to find purchasers or tenants unless rent or neighbourhood forms an obstacle. Sanitation and showiness are now the watchwords of house-seekers.

It is not only houses of a cheap class that are constructed on the principle of making showiness the more important element. We believe it will be discovered that one of the causes of the failure of so many builders is to be found in speculations having for their object the erection of very large and very imposing houses, for which high rents are indispensable if there is to be any interest on the outlay. People who can pay liberally are disposed to hesitate at the present time before they invest in buildings, and the speculators suffer in consequence. It may, however, be worth inquiring whether the builders have not read the signs of the times with skill. Is there any reason for supposing that one style of house is more preferable to the public than another?

We think it will be found that people in our time are more eager to seek after novelty in everything than their fathers were. The days are departed when good folks could be happy, like the PRIMROSE family, with adventures by the fireside and migrations from the blue bed to the brown. We are restless, as if quicksilver had found its way into our blood, and demand change of scene perpetually. External objects pall upon us, let them be ever so lovely, and the discoverers of new scenes, like the inventors of new games, are respected as public benefactors. If Dr. SCHLIEMANN had spent a few years in seeking for columns and fragments of architecture in Athens few would care for him, but the unearthing of a pre-historic city in an unexpected place, and of ornaments that were a little peculiar, has been sufficient to spread his fame over all lands. Let him turn his attention to Ephesus, and as nothing novel is to be anticipated there he would secure no more than a languid attention given to his work. Life to be enjoyable must resemble the kaleidoscope: however beautiful the pattern may happen to be, we are not sorry when it is transformed into something that is different.

In architecture there has been at all times a struggle between those who seek after newness and the upholders of the old. What are the changes in style but signs of the

victory of the former? Early English is most charming, but it was superseded; Perpendicular did not equal Decorated in the beauty of its lines, but it had in its favour the agreeableness of novelty. Critics wonder how it was possible that Chinese and Egyptian forms should be attempted in England, forgetting that monotony in any shape becomes wearisome, and that philosophers would in time grow tired of the regularity of Harley Street and Gower Street.

It is one of the virtues of Queen Anne that it gives more opportunities than most other styles for the introduction of novelty. A building that in its unity resembles "an entire and perfect chrysolite" cannot be tampered with. There are severely Italian and Gothic houses in England in which it would appear indecorous to use paint of a different colour, and a Japanese cabinet or a Sèvres vase would seem to be rebuked in the drawing-rooms. But with Queen Anne nothing seems out of place that can be called beautiful. It accommodates itself to all changes of fashion with the ease of a grand dame. The consequence of so much adaptability is that there is more scope for invention in what are called the subsidiary arts of architecture. Compare a modern pattern-book of wall-papers, metal-work, furniture, textiles, with a corresponding one representing the trade of less than twenty years back, and the difference will be apparent. Opinions will of course vary about the value of the art, and the geometrical conventionality will be pronounced superior to the license of our time; all we say is that there are far more patterns required now, and they mean more profit to the producers.

It was a fiction at one time that the king never died, and a like character was assumed by architecture. All forms were supposed to be permanent when they were produced. There is no claim of that kind put forth on behalf of the style which is in vogue. It acknowledges the claims of fashion, and, so long as the fabric remains, allows of the substitution of sufficient features to satisfy the most whimsical. There is unfortunately a notion that architects care but little for the things which give so much character to a house, but which are almost as variable as the dress of the owners. They leave the finishing to the owner's taste, and he finds a tradesman who will not only decorate a building, but is prepared to undertake the whole of the work in the one which the owner contemplates erecting. This is no unusual occurrence. The only way to avoid it is to retain the supervision of every class of work from foundations to gasfittings. "Monumental architecture," which no more recognises pattern-books than plates of the fashions, is suggestive of something that is very grand, but in these latter degenerate days it has lost much of its power. The builder does not always recognise it when he speculates on his own account, and the men who purchase the houses from him feel that he is a kindred spirit, for the great city of London would collapse if endurance were given to the objects which are bought, sold, and exchanged.

## PECKSNIFF: A STUDY OF DICKENS.

[BY A CORRESPONDENT.]

WHEN, on the advice of certain wiseacres, my parents resolved to make an architect of me, I rebelled against the arrangement. The cause of my opposition will be thought trivial and foolish. I had been reading "Martin Chuzzlewit." In my ignorance of life SETH PECKSNIFF and his clerk, TOM PINCH, were taken as types of the profession, and neither was attractive. It will, I know, give my readers a low opinion of my judgment in other things besides the *belles-lettres* when I confess that I despised the angelic Tom even more than his master, but I supposed that he was a product of office work, and I was too proud of my appearance to be ambitious of holding the position of assistant when the price was a bald head, weak eyes, and a general absence of muscle. I was without any skill in music, and I felt that I was not to have the compensation of becoming like the figure in the frontispiece to the book, that is seen playing on an organ and surrounded by crowds of delighted spirits. I have outlived a good many prejudices, but my aversion to Mr. PINCH is not one of them. I think there was an excuse for the playful MERCY when she made fun



of him. He is too limp and gentle for this world of ours, in which, as the Frenchman says, "Le faible est destiné pour servir le plus fort."

It might have been better for myself if my fancies had been considered, and probably the world would have revolved as smoothly on its inclined axis if I had never drawn a plan. But grown people are not disposed to attend to youngsters' feelings about education or business, and, like many a fellow before and since, my position was fixed for me, and I was left to get over my dislikes with the help of time. My fee was paid, and I believe something was promised on my master's part which it was nobody's business to see carried out. What he knew or could teach is not now in question. If he were less competent I should still revere his memory, for in the course of the first week I saw very plainly there was nothing in common between him and PECKSNIFF. Fragments of intelligence from offices in the town and elsewhere reached us occasionally, and I was astonished to find that however keenly my fellow pupils criticised architects, I could hear of nothing to correspond with what I had read in the novel.

Since then I have met with many men whom, according to custom, I was expected to recognise as "professional brethren," although very little fraternal affection was exhausted among us. I have had my share of failures, which were not always, I think, a consequence of fair play; and I have suffered when I saw the airs taken by architects who were more successful than myself. But I have no hesitation in saying that, however much I may have been biassed against rivals, in not one among them, in town or country, could I recognise the Pecksniffian lineaments. If it be a portrait, it is from an exceptional piece of inhumanity, and thank heaven it is not generic. We know that DICKENS had some little skill in catching a likeness when there were subjects before him, as in the case of lawyers. DODSON and FOGG; the promising junior, Mr. SKIMPIN, aged forty-three; the venerable Mr. Justice STARELEIGH, who took so many notes with a pen without any ink in it; the oppressive TULKINGHORNE, who stalks about like Fate in a Greek tragedy; tall Mr. WITHERDEN, who introduces "sir" so often in his discourse; the genial judge who examines the wards in "Bleak House"; SAMPSON BRASS, of Bevis Marks, and the rest, are not entirely grotesque phantoms. Architecture comes so often into contact with the High and Low Courts of THEMIS that we must all have met characters who have had resemblance to them. They are caricatures, but we see a likeness. But PECKSNIFF? Can the most aggrieved client, who is wrathful when he finds that his "fads" have to be expressed in pounds sterling, and that the alteration of a plan means the drawing of cheques—can the most irascible of builders, who sees a big bill of extras dwindle slowly away, like the sand in a hour-glass, dare to say that the architect who causes all the woe is a second PECKSNIFF? Emphatically I say no, and I defy all our enemies to support the novelist.

It is often supposed that Sir WILLIAM TITE unconsciously sat for PECKSNIFF, in the same way that HAROLD SKIMPOLE was modelled on LEIGH HUNT (to the dishonour of DICKENS), and the blatant alderman in "The Chimes" was suggested by Sir PETER LAURIE. If so, the portrait does little credit to the artist's eye or hand. I have had opportunities of observing TITE in three of the parts in which he acted during his later years, that is as a legislator, a scholar, and a magnate of the Institute. From what was said against the man, there was a lurking suspicion in my mind that perhaps PECKSNIFF was not entirely an imaginative being, and I own that I was disposed to make the worst of anything I saw and heard. But although there were weaknesses enough about Sir WILLIAM TITE, there was no trace of the Pecksniffian meanness or dishonesty. He might have served for the Shakesperean justice, although he wanted the formal beard, for he was good capon lined, had eyes severe, and abounded in wise saws and modern instances, but not one of the novelist's characteristics will suit him.

I saw TITE, as I have said, under three aspects. There was a Bill relating to the town in which I then lived, which came before a Committee of the House of Commons on which TITE sat. His shrewdness and experience in all matters relating to works made him a formidable power in such a case and one of the counsel resented his interference

and display of technical knowledge, with the exaggeration that is common on occasions when lawyers wish to make out that their clients are not receiving justice. A man with any grain of Pecksniffism in him would have raised capital from the scene, either by standing on his dignity as a member, or by appealing to his antecedents, but Sir WILLIAM took it all in right good-will, and he expressed himself so gently in his explanation, and was so apologetic for having given occasion for remarks, that I think the counsel and his clients were satisfied. If not they should have been. That was the only occasion on which I saw TITE acting as a legislator, and I was impressed by it in his favour. How did he appear in the rôle of a scholar? PECKSNIFF, we know, utilised books as properties, and, as he waved his hand towards them, would say:—"Various books, you observe, connected with our pursuit. I have scribbled myself, but have not yet published." Sir WILLIAM was the owner of many books of a valuable kind on subjects outside his profession, and he had that knowledge of bindings, editions, dates, and title-pages which appears to be of little consequence when possessed by a dealer, but becomes mightily impressive if acquired by a wealthy amateur. Sir WILLIAM's imperious manner and deep voice, with Lady TITE always ready as a reference (for book-hunting seemed to be a pursuit in common), made it risky when a man hesitated about accepting his opinion on a literary subject. There was sure to be a shaking of heads, with other signs of sapience among the people present, which showed that Sir WILLIAM expressed the opinion of the majority. We all admit there is no royal road to learning, but in many London drawing-rooms it is supposed there is a golden one, and that money brings omniscience among the blessings in its train. If a reverse of fortune had come upon Sir WILLIAM, I doubt if he would have been competent to undertake a professorship of classics or literature in any form, but he possessed sufficient knowledge to make a safe librarian. In Conduit Street he was always impressive, and he had the conviction that his power was recognisable. To my irreverent eyes he was an interesting object. One has to be born an artist, while the humblest man in the room could feel that it was only necessary for Fortune to be gracious, and he was competent to hold such a position as TITE's. He obtained the respect which a man whose signature is good for six figures can claim by right, and he looked as if he were conferring a favour by bringing a golden atmosphere to the meeting. In my own mind I have likened him to "JOVE in his chair" in the old burlesque, and sometimes the scene has suggested LANDSEER'S *Laying Down the Law*, but no freak of fancy could bring the meeting into association with the novel. His enemies might say that TITE was garrulous, purse-proud, conceited, and opinionative, but with all his faults and foibles he was not a sneak like old PECKSNIFF.

I have descanted at too great length on Sir WILLIAM TITE, but it is worth remembering that DICKENS went out of his way to imply that there was a PECKSNIFF in flesh and blood about 1844, and only one name has been suggested as having a title to so much dishonour. "Mr. PECKSNIFF will by no means concede to me that Mr. PECKSNIFF is natural," wrote DICKENS, and he explained this want of recognition by the architect of his own portrait by saying "that no man will admit the correctness of a sketch in which his own character is delineated, however faithfully."

Having said so much, it is now time that we should consider PECKSNIFF without any reference to an individual. I do not propose to touch the creation, except as it is put forth as a representative of architects in general. The poet in the TODGERS' establishment spoke of the Tritons flocking round the bark of PECKSNIFF (meaning the stage coach), and admiring "The Architect, Artist, and Man." I have nothing to do with the man in his private capacity, as an aspirant for a share in the family plate and silver spoons of the house of CHUZZLEWIT, and as a type of the respectability that keeps a gig.

I think it may be premised that DICKENS could have had no knowledge of his own about architects and their doings. He was not much of a patron of the arts, and, so far as I can discover, none of his wealth was expended on building. For a time I believe he was an underling in a lawyer's office, and from SWIVELLERS and CHUCKSTERS may have derived information which he was afterwards able to utilise. There was no such clue to architects' misdeeds.



It is now apparently impossible to discover what induced him to meddle with a subject like architecture. I have imagined that it was a suggestion of HABLOT BROWNE'S, the artist who did so much to build up DICKENS'S reputation, and with how much ingratitude every one knows. BROWNE was to have been an architect. Some of his etchings denote much skill in representing buildings, but he was too gentle a man to take a part in the collisions which practice entails. I have often thought that the description of TOM PINCH is not unlike him in some respects, just as the sketches of PEGGOTY are a counterfeit presentment of "PHIZ" at a later time. Wherever the suggestion or information came from, DICKENS was incompetent to give it an appearance of reality.

We see this from the first. Mr. PECKSNIFF'S brass plate announced that he was an architect. We are told, however, that "of his architectural doings nothing was clearly known, except that he had never designed or built anything; but it was generally understood that his knowledge of the science was almost awful in its profundity." In London and in one or two large towns in the provinces it is possible for any man who owns a hall door to screw a plate of the kind upon it. But could such an announcement appear in a Wiltshire village, within a mile or two of Salisbury, without risk to the advertiser? I think not, for in the country opinion has a force which is apparently unknown to Londoners.

PECKSNIFF could hardly escape detection. He is supposed to have trafficked in pupils, but the young fellows—all of whom, we are informed, went away with the conviction they had been swindled—would have proclaimed in the village alehouse, as well as in Salisbury, that buildings were never entrusted to their master. A little knowledge of the profession would have shown DICKENS that architects, when work is scarce in their offices, hesitate about bringing in a strange pupil and thus to run the risk of exposure.

It was probably the author's intention to have exposed the system of attracting pupils by means of advertisements, as he had before exposed the Yorkshire school system. An eligible opportunity, practical education, comforts of a home, moral responsibilities, and the like, which were the elements of the advertisements, have through the novel fallen into disrepute, but they are desirable things if they can be secured. A fee of 500*l.*, with 70*l.* a year, which JOHN WESTLOCK is supposed to have paid, would not be too high a price for them. But it was irrelevant for DICKENS to introduce the fee system, since MARTIN CHUZZLEWIT is taken without payment. He wanted, however, an opportunity for a gibe at the profession, and was willing to sacrifice unity to gain it.

The extent of DICKENS'S acquaintance with architectural subjects is evident from the description of the pupil's first appearance at the office. He finds PECKSNIFF "surrounded by open books, glancing from volume to volume, with a black-lead pencil in his mouth and a pair of compasses in his hand, at a vast number of mathematical diagrams of such extraordinary shapes that they looked like designs for fireworks." Is not the comparison excruciatingly funny? DICKENS had seen, we suppose, some engraved plans of a Gothic church, with lines showing groining, and to his cultured intellect they suggested a catherine-wheel! Is there any other country where a man of genius would venture on such a comparison, being assured that it would serve, since his readers were more ignorant than himself? But the views on the walls of the office were, if possible, more absurd to an exalted mind of the cockney kind than the fireworks plans. Mr. PECKSNIFF points to them in his grand way:—"Salisbury Cathedral from the north; from the south; from the east; from the west; from the south-east; from the north-west." The English public will laugh at the inventory, just as the French still titter at the strange names of theologians recorded by PASCAL. To have drawings made of a fine building like Salisbury Cathedral, from many points of view, was, to DICKENS and his readers, not merely an absurdity, but a proof of dishonesty. What more need be said to prove PECKSNIFF'S guilt? In the very beginning of the story he is shown to be a rascal by the mere fact of possessing six different representations of one cathedral, which are as bad as the separate parts of a coiner's apparatus. Henceforth the way is made easy for the novelist to pile on crimes until PECKSNIFF becomes "a drunken, begging, squalid, letter-writing man." It is clear

that DICKENS had not studied criminals in the Old Bailey for nothing.

Young CHUZZLEWIT was deficient in all kinds of knowledge that might be useful in an office. But on the first morning, without a word of instruction, he is set to work out a competition design for a grammar school. "Who knows," said Mr. PECKSNIFF, "but a young man of your taste might hit upon something, impracticable and unlikely in itself, but which I could put into shape? For it really is, my dear MARTIN, it really is in the finishing touches alone that great experience and long study in these matters tell." If JOE GRIMALDI (of whom DICKENS was the biographer) talked and acted in this strain at Sadler's Wells, the gallery might well laugh, but when put forth as a representation of an architect's way of doing business it becomes a very dreary attempt at humour. The climax of the absurdity is reached when afterwards in the story we discover that MARTIN'S marvellous design did gain the prize, and was to be carried out with great applause. Need we wonder that the English people look on architecture as something which anyone can take up at a pinch when a teacher like DICKENS can give so ridiculous a picture of the production of a design? It is believed, too, that works which abound in statements no less unfounded are worthy to descend to posterity as records of English life in our century.

The pupil is advised to combine building with his drawing, and here is how architects are supposed to gain practical knowledge:—"There are a cart-load of loose bricks and a score or two of old flower-pots in the back yard. If you could pile them up, my dear MARTIN, into any form which would remind me on my return, say, of St. Peter's at Rome, or the Mosque of St. Sophia at Constantinople, it would be at once improving to you and agreeable to my feelings." It is sad to think that it is from rubbish of this kind the English people draw their notions of our work. DICKENS did not esteem us, and it is not surprising that when he had to describe the peculiar rooms in a water-side tavern, where TAPLEY and MARTIN dined, he said they were produced "by reason of the facilities afforded to the architect for getting drunk while engaged in their construction."

One of the mysteries of the book is the introduction of architecture. It has so little relation to the story that PECKSNIFF might be transferred into any other business without affecting the action and plot. DICKENS was most defective in construction; but in all his books I don't know of anything that has less purpose than the architectural element in "Martin Chuzzlewit." The meaning of it all may one day be revealed.

It is perhaps a waste of paper to continue the analysis of such a book. But I feel it has done harm. It has created a phantom which, from the popularity of the writer, is accepted as a veritable portrait, and every puny fellow who can hold a pen is safe to slander honourable men under the authority of CHARLES DICKENS.

## COLONIAL ARCHITECTS.\*

AT the present time, when the Colonies have assumed increased importance, the publication of a new edition of Messrs. Street's invaluable directory is most opportune. It is so full of information, and is so comprehensive in character, as to become indispensable to all who have business of any description with one or other of the numerous English colonies. In addition to the lists which are usually found in directories, we have statistics derived from the latest returns, and nineteen excellent maps. The book has consequently a claim to be considered a colonial gazetteer as well as a directory. From the pages we may derive a notion of the state of the building trade.

India takes the first place. Calcutta we are told contains dirty streets and mean houses in the native portion, whilst the European part has given rise to the title of "The City of Palaces." There are eleven names of firms put down as architects and surveyors, but we find that eight of them appear among the builders, and nearly the same number among the engineers and contractors. The condition of things is suggestive of what takes place in other parts of the Colonies, and it is evidently essential that every man who is desirous to set up as an architect should be possessed of practical knowledge. In Calcutta the only Eastern name among architects is "Ali";

\* Street's Indian and Colonial Mercantile Directory for 1884-5. Tenth Issue. Street & Co.



but among the dozen firms in Bombay that represent architecture, building, and contracting, we find such names as Naggoo, Syajee & Co., and Raghunath Muccrondas. Building in Madras has three representatives. In several of the lesser towns we also find Indians as builders and contractors. Simla has two British architects, and five contractors have found their way to Gubbulpore, a modern town with "public buildings, well situated, and constructed with taste." Ceylon evidently depends on builders of a humble class, for there are no names of them in the directory.

Hong Kong possesses two firms of architects and surveyors, while Shanghai, although apparently without architects, has nine civil engineers. There is an architect in Foochow, one in Yokohama, and one in Tokio. In the Island of Mauritius the people are apparently so intent on litigation that there is no time for building. About sixty attorneys and thirty barristers-at-law find occupation, and as there are a dozen land surveyors we suppose the fields are always changing owners to defray law costs. With sixty physicians and surgeons in addition the island must be in excellent pickle.

Melbourne, according to the directory, "abounds in edifices which rival those of the older capitals of Europe," while "the buildings devoted to the purposes of trade are, many of them, of a superior order, and some will vie with similar places in the cities and towns of Great Britain." There are about eighty architects' names entered in the directory. Ballarat has eight, Belfast three, Castlemaine two, Geelong four, Sandhurst two. Sydney has a population of 250,000, but it seems to have a larger proportion (over one hundred) of architects and surveyors than most towns in the Colonies, while the builders fill more than three columns. This may be partly owing to the Improvement Board having "caused a revolution by condemning old and unsafe tenements in every direction."

In Melbourne we find about a dozen architects. Brisbane has eight. New Zealand somehow has done less for the art than the sister colony in the southern ocean. The population is not one that dwells in towns. Wellington has only eight architects and surveyors, and in Auckland there are five. In Christchurch we find more signs of improvement. "The wooden buildings, of which the city was almost entirely constructed originally, are now rapidly giving place to brick and stone edifices, many of them of an exceedingly handsome and stately character;" and as intelligence of the transformation must travel quickly, over twenty architects are now to be found in the city. As a rule, there is one architect to 10,000 inhabitants in the Colonies, but in Christchurch the proportion is about one to 1,500. In Timaru there are seven architects and seven builders for 4,000 people. Nelson has only four. Dunedin is another progressive city, but with eleven builders there are twenty architects. Tasmania is backward in the arts, for there are only half a dozen architects in Launceston and Hobart Town. As yet, no member of the profession appears to have found his way to Fiji. Turning to Africa, we see that Cape Town has eight architects. Port Elizabeth, although much smaller, has seven, while East London and Grahamstown have each four. Durban has two.

Canada hardly appears to be so well supplied as might have been anticipated. Montreal, with a population of 170,000, has only about twenty architects. Among them we recognise such French names as Perrault, Baudry, Mesnard, Roy. In Ottawa we find five, in Quebec nine (nearly all have French names), while Toronto has over forty; but it should be remembered that it is a church-building city, and has 106 churches. Hamilton is another go-a-head place, with nine architects. London, which fifty years ago was a wilderness, has nearly a dozen architects and three "artists." Halifax has six, and the same number is found in the remote Winnipeg.

The directory gives information respecting countries in South America with which England has business transactions, and with such a book before them it is not surprising that foreign Governments should become emulous of competing with us for distant markets.

### ART LOGIC.\*

By LAWRENCE HARVEY, A.R.I.B.A.

IN schools we are taught to read and write correctly our own language; but although we may have mastered the mysteries of the subjunctive mood, and escape the pitfalls of the double negative, that does not make us writers like Dickens, Thackeray, or Lord Tennyson.

The main difference between these great men and the well-trained schoolboy is not in the knowledge of language, but in another element called brains.

What I have said about language holds good with the arts

taught in this school. You all know the answer of a great painter to his pupil, who was asking him with what he mixed his colours to produce a certain effect—"Brains, sir." Brains mean the power of thinking, and thinking cannot be done without logic, which is the art of thinking. So, however distant the words "logic" and "art" may seem at first, you see full well they are closely united in every great work of art, and justify the title I have given to this lecture.

I am aware that amongst artists logic is at a discount, for artists hate to have their works analysed like mathematical problems. Many of the disputes of men arise out of the poverty of our language: people often fight tooth and nail because they misunderstand one another. Popularly the word "logic" is restricted to the art of thinking when applied to geometry, where we deal with dimensions and quantities. This branch of logic, peculiar to mathematical sciences, of course fails when applied to man, his institutions and his works; for there are not two men absolutely alike, and, moreover, the same man is not two moments alike. At the one time he will take as a compliment what at another time he will resent as an insult. This is embodied in the well-known practical advice of men of business, that you must see a man after dinner when you have a favour to ask.

On account of the restricted meaning generally given to the word "logic," I am not surprised to see artists hate it; but, nevertheless, every artist, as well as every statesman and man of business, has a way of reasoning out what he does or says—*his own peculiar logic*.

It would probably help artists very much if the great masters who have preceded them had left a written record of the logical arguments they applied to their work. But artists are not prone to write down their reasonings, because they take place so suddenly and rapidly that they could not easily find words to express them; they prefer, therefore, to mystify the public and themselves by attributing what they do to some mysterious supernatural power, which they call "inspiration," or, as the Greeks put it, to the goddess Minerva, who benevolently whispers in their ear what they must do.

When, by some rare chance, a great artist takes to writing down his thoughts and giving us his complete system of art logic, then the world can hail a benefactor. For, be his system right or wrong, it sets all the artists thinking, and out of the practice of thinking comes art.

Such an artist was the late Gottfried Semper, the greatest architect Germany has ever had, and who played an important part in the starting of our English schools and museums of South Kensington. You have, therefore, to some extent, a proprietary right in Semper, and I am well pleased, as Semper's pupil, to have an opportunity of explaining to you this evening the late professor's art logic.

We cannot ask a guide to show us the way before we know where we want to go, and, therefore, for artists, the first question to be answered, before all others, is—What is art? To this question all kinds of answers have been made.

Some say that the more fully an object fulfils its destination the more beautiful it is. Nature will be brought forward as a proof of this, for every detail of a plant or organ of an animal perfectly answers its purpose. Unfortunately, we are still very far from fully understanding the work of God, and I think it will be safer for us to examine this question in the work of man, which we can thoroughly grasp.

Here is a pretty vase. Its surface is delicately modelled and ornamented by paintings. The purpose of this vase is to contain liquid. Now, would it fulfil that purpose less well if it were left absolutely plain? Of course not. Therefore we see there is some other reason for its beauty beside its fitness for containing liquid.

There are a good many people who think that the beauty of a drawing depends on its accuracy and finish. I have seen so-called connoisseurs enthusiastically admiring the portrait of an old man because, armed with a big magnifying lens, they could actually count every hair on his chin, so wonderful was the finish of that picture. If finish and truth are the essence of art, then draughtsmen are nowhere when compared to photographers.

I think you will all agree with me that we do not look at pictures to get information, but pleasure—or, I should rather say, emotion; for the sensations produced by art are not always bright, but often melancholy, and bring as often tears as smiles in our eyes.

The question what is art cannot be answered offhand. Man is born intellectual—that is, with an instinctive wish to comprehend the world in which he lives, with a dissatisfaction at things as they are, and a desire for improvement and perfection. The impossibility of satisfying these—his higher instincts—gives him pain. Still, the satisfaction of these instincts is as necessary to the preservation of his mind as the satisfaction of hunger is to that of his body.

From this aspiration to improvement and perfection three human manifestations have sprung:—Science, by which we endeavour to discover the essence of things—an inquiry which

\* From a lecture delivered at the Chiswick School of Art on Wednesday last.



fills us with hope, and affords thereby temporary relief to our thirsting souls, but which always ends by being baffled; religion, by which we image forth a state of perfection beyond the tomb, and endure the present as of no account; art, by which we create for ourselves a small world, perfect within its limits, in the contemplation of which we forget reality. Art is therefore an abbreviation of nature—it follows the laws which man suspects govern nature's products.

These laws are the Eurythmus or regularity suggested by the regular recurrence of days, seasons, and tides. Then by considering a portion of regularly-formed objects, such as a part of a flower, we get the idea of symmetry. The vegetable world gives us the notion of proportion, the animal world the notion of direction, for most animals have a head and tail. Regularity, symmetry, proportion, and direction, such are the fundamental elements of form both in nature and in art. But they do not in general all reign equally in the same objects. Sometimes it may be regularity which predominates; sometimes it may be direction, and this gives us the notion of bias or character. Regularity is the characteristic of snow crystals, and direction is the characteristic of fishes. Similarly in art, necklaces, dances, and music depend for their beauty on the regular recurrence of objects, motions, or sounds. Symmetry is the special characteristic of frames, windows, doors, and altar-pieces; proportion predominates in towers; and direction in things that have a bias of the will—such as a ship, a cathedral, on the one hand, and the personal ornaments of the hunter and the warrior (the flag, the plumed helmet) on the other.

Ornamentation, dancing, and music are founded entirely on the laws of nature, and therefore we call them natural arts. But painting and sculpture, whose primary object was imitation of nature as a means of recording facts; architecture, whose initial purpose was the construction of man's shelter, as well as language itself, take rank as arts only when they aim at the same results as the natural arts of ornamentation, dancing, and music.

From any of the primitive arts we shall probably be able to deduce principles which may guide you in the comprehension of the beauties of the masterpieces of literature and painting. I propose, therefore, to examine with you some of the most simple of personal ornaments, and illustrate thereby various subjects of art.

The lecturer then examined various natural and artificial objects by the aid of analysis. In conclusion, he said that students should remember that as the sublimest mathematics are dependent on a thorough knowledge of the multiplication table, so in art no high, artistic career can be erected except on the foundation of a thorough knowledge of drawing.

## TESSERÆ.

### Moorish Colouring.

OWEN JONES.

THE colouring of the Casa Real was carried out on so perfect a system that any one who will make this a study can with almost absolute certainty, on being shown for the first time a piece of Moorish ornament in white, define at once the manner in which it was coloured. So completely were all the architectural forms designed with reference to their subsequent colouring, that the surface alone will indicate the colours they were destined to receive. Thus, in using the colours blue, red, and gold, they took care to place them in such positions that they should be best seen in themselves, and add most to the general effect. On moulded surfaces they placed red, the strongest colour of the three, in the depths, where it might be softened by shadow—never on the surface; blue in the shade, and gold on all surfaces exposed to light; for it is evident that by this arrangement alone could their true value be obtained. The several colours are either separated by white bands or by the shadow caused by the relief of the ornament itself, and this appears to be an absolute principle required in colouring. Colours should never be allowed to impinge upon each other. In colouring the grounds of the various diapers the blue always occupies the largest area, and this is in accordance with the theory of optics and the experiments which have been made with the prismatic spectrum. The rays of light are said to neutralise each other in the proportions of three yellow, five red, and eight blue; thus it requires a quantity of blue equal to the red and yellow put together to produce a harmonious effect, and prevent the predominance of any one colour over the others. As in the "Alhambra" yellow is replaced by gold which tends towards a reddish yellow, the blue is still further increased, to counteract the tendency of the red to overpower the other colours. Whether the Moors in their marvellous decorations worked on certain fixed rules, or only in accordance with a highly-organised natural instinct, to which they had arrived by centuries of refinement upon the works of their

predecessors, it would be difficult to say. One person may sing in tune by natural instinct as another may by acquired knowledge. The happier state, however, is when knowledge ministers to instinct; and we are inclined to believe that this must have been the case with the Moors.

### Proportion in Music and Architecture.

F. MILIZIA.

Vitruvius having recommended the architect to acquire some knowledge of music, many have supposed he intended to infer that there was a union between the proportions of that science and architecture; but had they thoroughly studied the passage in question they would have found also his reasons for the recommendation, viz., that the architect should know how to arrange an orchestra or other buildings where sound is important. For want of this attention many, led away by a wild imagination, have endeavoured to erect harmonic structures by the introduction of what they term musical proportions. When the plan, elevation, arrangement, and ornaments of an edifice form one grand whole, then, and then only, can the epithet harmonious be applied. Such a whole is not produced by eighths, fifths, and thirds, but by laborious study matured by observation and reflection.

### Roman Basilicas.

J. H. POLLEN.

The material of these buildings was, in general, brick; and for a kind of masonry, then only valued for its superior cheapness and utility, none ever was more accidentally sublime. That kind of work, of which traces still remain of the age of Honorius in Rome, called "reticulatum," had gone out of use. It consisted in the facing of the mass being laid endways, the bricks being square on the facings and diminishing within so as to set in like teeth. The brick of Justinian's time, and commonly used in the basilicas, is the old dark-red large flat brick, a foot and a half long, with bands of large tile introduced, and arches turned in the same material. The quantity of mortar used, and the proportion of surfaces on which it fastens, form the secret of the extraordinary solidity of this mode of building. The walls and vaults become hills of solid rock. The campaniles, or bell towers, attached to the basilicas, usually distinct from them, are built round at Ravenna, elsewhere square, but without buttresses like our northern towers. The construction, then, of these churches being thus simple and solid, is usually left to speak for itself externally. As architecture, the basilica-builders had no sort of intention of challenging critics in their interiors only. This was by a system of decorative incrustation. Very rarely had they the means, or did interest for the mode of building subsist a sufficient number of ages, to see this incrustation carried out to the exterior surface.

### Artists' Sketches.

GEORGE SCHARF.

The true temperament of the artist is often concealed in the finished picture by the process of completion. Many a bold design has been worn away and lost by elaborate overworking; and sometimes an effect of comparative boldness has been achieved by repeated touchings up. The works of Benjamin West are a strong case in point. His sketches are vigorous in the extreme, but all spirit and clearness of colour have been laboured away in his finished works. Any one who will look at one of the pen-and-ink sketches by Raphael, and bear in mind that it has been done off-hand, at a moment, and without any preparation of pencil outline or other auxiliaries, must be impressed by the wonderful amount of previous labour and perseverance necessary to attain such facility. The materials mostly used, because most readily attainable, were red and black chalk. These, in Italy, are natural productions, sawn from blocks, and used as commonly as blacklead pencils are among us. Such were the materials for impromptu sketching in note-books; but if the artist sat down deliberately to compose or study with reference to a picture, he generally used pen and ink, the latter being a solution of bistre or sepia in water, the former a common reed pen. Another and very refined material was the silver point. Raphael and his master Perugino very frequently used it. A sheet of paper was covered with a flat tint of tempera colour—that is, of distemper paint, such as is used in paper-hanging—which gave not only whatever hue to the paper might be required, but also afforded a sufficiently granulated surface for the silver pencil with a fine point to act upon. At Oxford, in the University Gallery, are some wonderful specimens of Raphael and Perugino's mastery over the silver point. In illustration of the interest belonging to the record of first thoughts, I may mention that certain leaves of a small square sketch-book belonging to Michel Angelo are still preserved at Oxford, on which may be seen the very first thoughts for many of his finest figures connected with the prophets and sibyls on the ceiling of the Sistine Chapel. They are very small and slight, just as he jotted them down on the



spur of the moment; but although in only three or four lines, we see there all the elements of grandeur and dignity which characterise his fresco figures in their most finished condition.

### Marble.

PROFESSOR NEWBERRY.

In common language, any hard, calcareous rock which will take a polish is called marble. But strictly speaking, only those limestones which have been subject to metamorphic action can be properly designated by this term. It must not be inferred, however, from these facts that the marbles are necessarily very ancient rocks, for the causes which have operated to elevate mountain chains and metamorphose the rocks which form them have acted in all geological ages, and some of the most beautiful marbles known are from comparatively recent formations, such as the Carrara statuary marble, which is a metamorphic limestone of Jurassic age. Marbles, in commerce, are divided into two groups—the white and the coloured. In the first category are placed not only the pure white statuary marble, but those which are chiefly white, though specked, clouded or veined with darker colours. The coloured marbles comprise those that are grey, blue, black, green, red, and yellow, or mottled by various mixtures of these colours with each other or with white. Marbles also vary much in their chemical composition, their texture, and their structure, some being nearly pure carbonate of lime, while others—and among these some of the most highly esteemed—contain large quantities of magnesia. In texture they vary from those in which the paste is scarcely granular to such as are very coarsely crystalline. This latter characteristic does not prevent their receiving a high polish, though the finer-grained marbles excel in this particular. In structure they may be homogeneous, though coarse, or veined and brecciated as though composed of a mixture of very different materials; and further, they may be pure or impure—that is, may contain silicious masses, technically known as quartz and flint, or “curdle,” which is generally tremolite; they may be sound or unsound, by which is meant solid and compact, or checked and fissured by cracks or veins; and, finally, they may be strong or weak, durable or perishable. The quality of first importance in a marble is beauty, for it is chiefly a stone of ornament, and their varied and attractive colours and brilliant polish constitute the shining qualities of the most esteemed marbles; but the uses of marble are various, and are often such as to require both strength and durability. The uses to which the “white marbles” are devoted are quite varied, and admit of a diversity of quality. The finest “white stock,” including some statuary, is used for mantels and furniture; the second grade, typified by the “veined Italian” (which is not veined at all, but only slightly mottled or clouded), for the same purposes and for monuments; while “monumental stock,” white mottled with dark blue or grey, generally also banded or clouded, is chiefly employed for sepulchral monuments, while the coarser white, pure or clouded, forms the material of which are composed the most beautiful, if not the grandest, structures raised by the hand of man.

### Contagiousness of Dry Rot.

SIR THOMAS DEANE.

The parish church of the Holy Trinity in Cork having been found to be in a bad state of repair, and quite deformed from bad and unequal foundations, the parishioners resolved on building a new church; but, through want of funds, not being able to carry their design into execution, an extensive repair was decided on. The tower was taken down, and one side wall and the end of the church was rebuilt. Immediately under the floor of the church, and open to the burial-vaults beneath, longitudinal beams of Irish oak, of from 12 to 14 inches square, had been placed, resting on piers, and forming supports for the joists. Though these oak beams were decayed for an inch deep at their surfaces, sufficient of the timber (as it was thought) remained sound, and it was decided that neither they nor the piers upon which they rested should be removed. The vaults were arched over, memel joists, 6 inches by 4 inches, were placed on the vaulting, and connected with the old oak beams which rested on the piers; the floors were removed, the old pews replaced, new columns, coated with scagliola, were erected over the galleries, the old ones in the lower tier retained, and the whole repairs having been thus completed, the church was reopened for divine service, in April 1829. In November 1830 (but eighteen months afterwards), the congregation was annoyed by an unpleasant smell, which, on examination, was found to proceed from dry rot of the most alarming nature. On opening the floors under the pews, a most extraordinary appearance presented itself. There were flat fungi of immense size and thickness, some so large as almost to occupy a space equal to the size of a pew, and from 1 to 3 inches thick. In other places fungi appeared growing with the ordinary dry rot, some of an unusual shape, in form like a convolvulus, with stems of from  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch in diameter.

When first exposed, the whole was of a beautiful buff colour, and emitted the usual smell of the dry rot fungus. Whatever may have been the surprise at the rapid growth of the plant, its action on the best memel timber was a source of greater astonishment. I took up, with nearly as much ease as I would a walking-cane, that which, eighteen months before, was a sound piece of timber (one of the joists), from 12 to 14 feet long, 6 inches by 4 inches scantling; the form of the timber remained as it came from the saw, but its strength and weight were gone. The timber of the joists and floor over the new brick vaulting was completely affected by the dry rot, which was rapidly spreading to the lower part of the columns under the galleries, so that at the rate the infection proceeded, the total destruction of the building would soon have been effected. During a great part of the time occupied in the repairs of the church, the weather was very rainy. The arches of the vaults having been turned before the roof was slated, the rain water saturated the partly decayed oak beams, before described. The flooring and joists, composed of fresh timber, were laid on the vaulting before it was dry, coming in contact at the same time with the old oak timber, which was abundantly supplied with the seeds of decay, stimulated by moisture, the bad atmosphere of an ill-contrived burial-place, and afterwards by heat from the stoves constantly in use. All these circumstances account satisfactorily, to my mind, for the extraordinary and rapid growth of the fungi.

### Numerical Valuation of Pictorial Art.

J. B. PYNE.

The old mode of estimating the general excellence of a work, completed if not invented by Richardson, a most honest and sincere, though somewhat mistaken writer on art, still continues to mislead the equally sincere student; and, though just capable of leading him to estimate a particular quality, is totally inadequate to enable him to determine upon the general or total excellence of any one entire production. Richardson's process was to be pursued somewhat in this manner. A certain number, say ten, was given as a representative of the maximum value of every pictorial constituent. Thus, a work in which composition, chiaro-oscuro, colour, drawing, invention, expression, character, harmony, ideality, and grace may each be rated at their highest state of perfection, and numbered ten, would necessarily stand as A. No. 1 in art, as, added together, the full sum would reach 100, being the highest possible amount to be reached by this process. A work in which each constituent should be valued at 5, and amount in the gross to 50, would rate as exactly mediocre, and, at any rating under this sum, would have to be pronounced as more or less bad in its descent through the lower numbers. Nothing can be more apparently straightforward than this mode, its only and great disadvantage being that it does not lead directly to the object desired, but unfortunately so much across it that the further it be pursued the more the judgment will be led astray. For instance, there are many constituents of very high value in themselves that are but sparingly admissible in certain works, and others of equal respectability that are totally inadmissible, the first requiring strict subordination and the last requiring expulsion altogether. It follows, then, that to introduce them at their highest excellence would be to damage a work to the full amount of 10 each; or, at any rate, 5 each for the first and 10 each for the second class. It is indeed notoriously the impression of first-rate and classical critics that high works depend upon few constituents, if it may not be added that the highest maintain their pre-eminence on the fewest.

### French and English Timber Flooring.

PROFESSOR HOSKING.

We can and do frame floors most effectively by carpentry alone, whereas the French do the work in framing their floors so badly that no important bearing is, or indeed may be, trusted by them to the framed joint, dog-nailed stirrup straps of iron being always brought in aid. But the common practice with us, who can and do frame floors well, is to use single or unframed floors, which carry the weight and the vibration to which floors are exposed into the walls over voids as well as over solids; whilst, on the other hand, the French almost invariably frame their floors to or upon girders, by means of which the floors are brought to bear upon the solids of the walls. The walls are thus not only less exposed to vibratory action, but are both tied together and strutted apart with better effect by the stout girders stiffened by joists than by joists which themselves require some foreign aid to stiffen them. Moreover, single floors of joists, unless trimmed at frequent intervals—when, indeed, they may be termed half-framed—require, or are thought to require, plates of timber laid along the inside faces of outer walls and upon internal walls, and thus tend to the injury of the walls by introducing timber, that bane of brick and stone walls, into their structure, so as to render the timber a part of the structure. This defect is avoided by our neighbours, who exclude all timber, except the bearing ends of girders, from their walls, and who use framed floors.



## NOTES AND COMMENTS.

MR. ANDREW MACCALLUM, who is a native of Nottingham, has presented his large picture of *The Mayor Oak, Sherwood Forest*, to the Midland Counties Art Museum, to which Nottingham Castle is appropriated. In addition to Mr. JAY's picture, *At the Fall of the Leaf*, the Corporation have purchased for the gallery Mr. JOHN CHARLTON's battle-piece, *The Royal Artillery at Tel-el-Kebir*, which was exhibited at the Royal Academy in 1883.

WE wrote strongly against the proposal to erect a replica in the Gardens on the Thames Embankment of the BURNS statue in Dundee, on the ground that the original was unfitted for a public place, or for a memorial of the poet. A second replica is in New York. It is now proposed to erect a statue of BURNS in Montrose. Mr. CARNEGIE, in sending a subscription to the fund, expresses an opinion of the New York figure, which will show that we have not been alone in condemning the work. "In the interest of art, and from a due regard for my favourite poet," he writes, "permit me to express the hope that you will not think of taking a replica of the statue with which we are afflicted in New York. To see BURNS in the form of a hump-backed simpleton is distressing; and I assure you that more money could be raised to take the statue from New York Central Park than was raised to put it there."

THE French artists have organised a copyright bureau for the protection of their interests, and it has been opened in the Faubourg Montmartre, under the direction of M. FOUSSAT. The position is convenient for the artists in the newer quarters of the city. It is characteristic to find co-operation applied to law in this way, but French artists appear to be less cognisant of their individual rights than their English brethren, and unless there is somebody on whom the trouble of litigation can be thrust, with a number of people to share the expenses, the pirates can copy and photograph without limitation.

THE exhibition which is to be opened next month at Buda-Pesth will give painters an excellent opportunity of seeing the most picturesque costumes in Europe. As the exhibition is to contain examples of agriculture, industry, and art in all forms, it has to be on an extensive scale, and about one hundred buildings, large and small, are now being constructed. There will be an eastern section in which the products of Bosnia, Roumania, Bulgaria, and Turkey will be seen. In some departments it will be international, but the Municipality and the Government have resolved that the exhibition shall be essentially Hungarian.

THE largest block of white marble seen in Antwerp has been lately delivered at the studio of M. ROUSSEAU. It was drawn from the dock by nine horses. The weight is 23,000 kilogrammes, or about 22 tons. The marble is to be used for a public statue of JORDAENS, the painter, who was born in Antwerp in 1594.

THE report of the great gas company which has the concession for the lighting of Paris is an interesting document for people who take pleasure in comparing statistics. The consumption of gas during last year has been more than two hundred and eighty-seven cubic metres, being an increase of about three and a half millions over the year 1883. The receipts for gas alone, exclusive of coke, tar, and ammoniacal liquor amounted to 73,369,545 frs., or about three millions sterling. The cost of production, including administration and taxes, was about sixty millions of francs. In Paris there are 51,823 public lamps, and outside the fortifications 8,694. The pipes laid under the streets are 2,075,782 metres in length. It is found that people are becoming more desirous to have gas on all the floors of the houses.

THE Berlin Law Courts are engaged in trying a curious case. One of the journals lately stated that a picture of a nude figure, called a *Baigneuse*, which appeared in the Fine Arts Exhibition of Berlin, was a portrait, and that it had been painted by a Bavarian artist out of revenge against the

subject. The figure was recognisable by a mark like that which IACHIMO saw on the breast of IMOGEN. The paragraph went the round of the German papers, and one of them supplemented the information by giving the name of the artist, who accordingly took an action against the journal in which the statement first appeared. The painter declared that the whole story was an invention, as he had never exhibited a picture of the kind. The publisher stated that he was ready to produce the evidence of the writer of the paragraph who had seen the picture, and a statement from the committee of the exhibition by whom it had been received and shown. It was also proposed to bring forward the *Baigneuse* herself. The judges opposed the last offer, but they have admitted the rest of the evidence, and therefore the case is to be continued. There seems to be no power to compel the production of the offending picture.

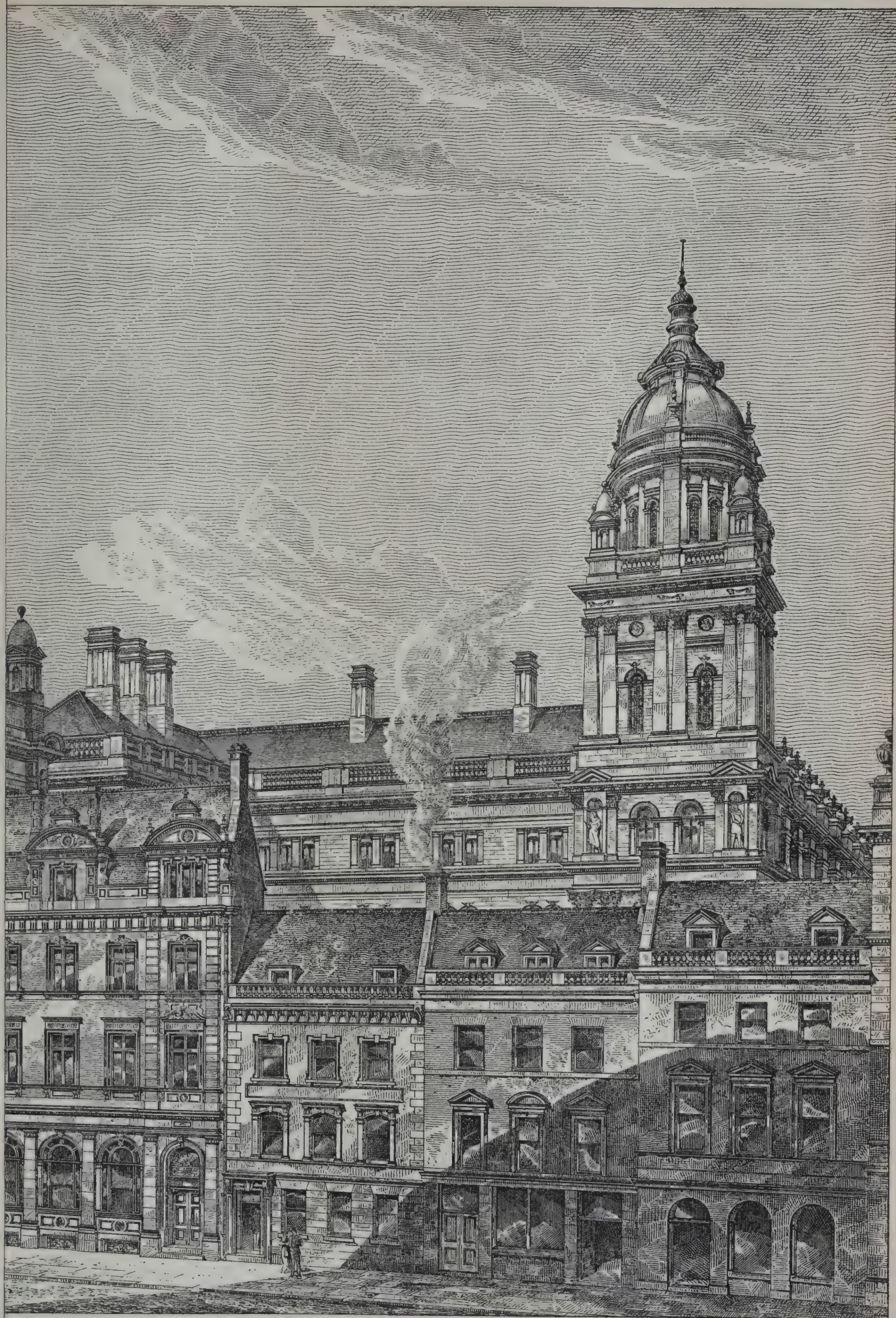
THE British Association will meet this year in Aberdeen, and, as the exhibitions of the local artists' society have been held during May, June, and July, it was feared that visitors who might visit the northern city to attend the scientific meetings would lose the advantage of seeing the pictures. At the request of the Council of the British Association the opening of the exhibition has been postponed until July, and it will not close until September. The Council have entered into an agreement with the Art Gallery Committee of the Corporation to guarantee a sum equal to one-half of the proceeds of the exhibition.

MR. LIONEL HAWKES has delivered a lecture before the Bolton Art Club on "Unadulterated Nature," in which dissatisfaction was expressed with the "grooming" which is now adopted by landscape painters in order to make their pictures superior to Nature. Painting the lily is simple if compared with the process. The superior worth of unadulterated Nature over the whole resources of studio skill and orthodoxy in art was maintained, and the lecturer advised artists to study Nature in its truth, and stand by it.

THE Central Committee of the Mansion House Council on the Dwellings of the People, in appealing for funds, announce, for the information of the public, that, while they are favourable to all schemes for reconstructing the dwellings of the working-classes on improved principles, yet this is a work demanding vast funds and a considerable period of time, and does not deal with the immediate and pressing evils. The work of the Council consists in taking advantage of the large amount of sanitary legislation now on the statute books, and remedying present evils so far as the *vis inertiae* and obstructiveness of the vestries will permit. At comparatively trifling expense, and by means of local committees (now thirty-six in number, spread all over London), local knowledge and local energy are brought to co-operate in this most important work. The whole work of the Council is carried out at an expenditure of about 600*l.* a year.

So many hard things have been said against the surveyors under the Ecclesiastical Dilapidations Act, there is some satisfaction in finding that one clergyman has had the courage to speak a word in their defence. The Rev. H. L. WATSON says that, in the archdeaconry of Leicester, the fees have produced an average income of only 75*l.* per annum. As to the exorbitant assessment, he finds, on dividing the period since the passing of the Act into two equal divisions and omitting one very exceptional case in each, that the average assessment in Leicester in the former period was 175*l.* and in the latter 95*l.*, indicating the better care taken by incumbents to provide against the charge. As to appeals, the Act has been worked so fairly that there has been only one in the archdeaconry (which is not exceptional in its extent or the character of its glebe buildings and parsonages), and in that one case the surveyor was unable from severe illness to complete the survey himself, and the appeal was on the ground not of an exorbitant but of an insufficient assessment, to which a slight addition was then made. Mr. WATSON believes that as it would be difficult to frame better provisions than those of the Act, the wisest course now is to adopt the principle of *quiesce non movere*.





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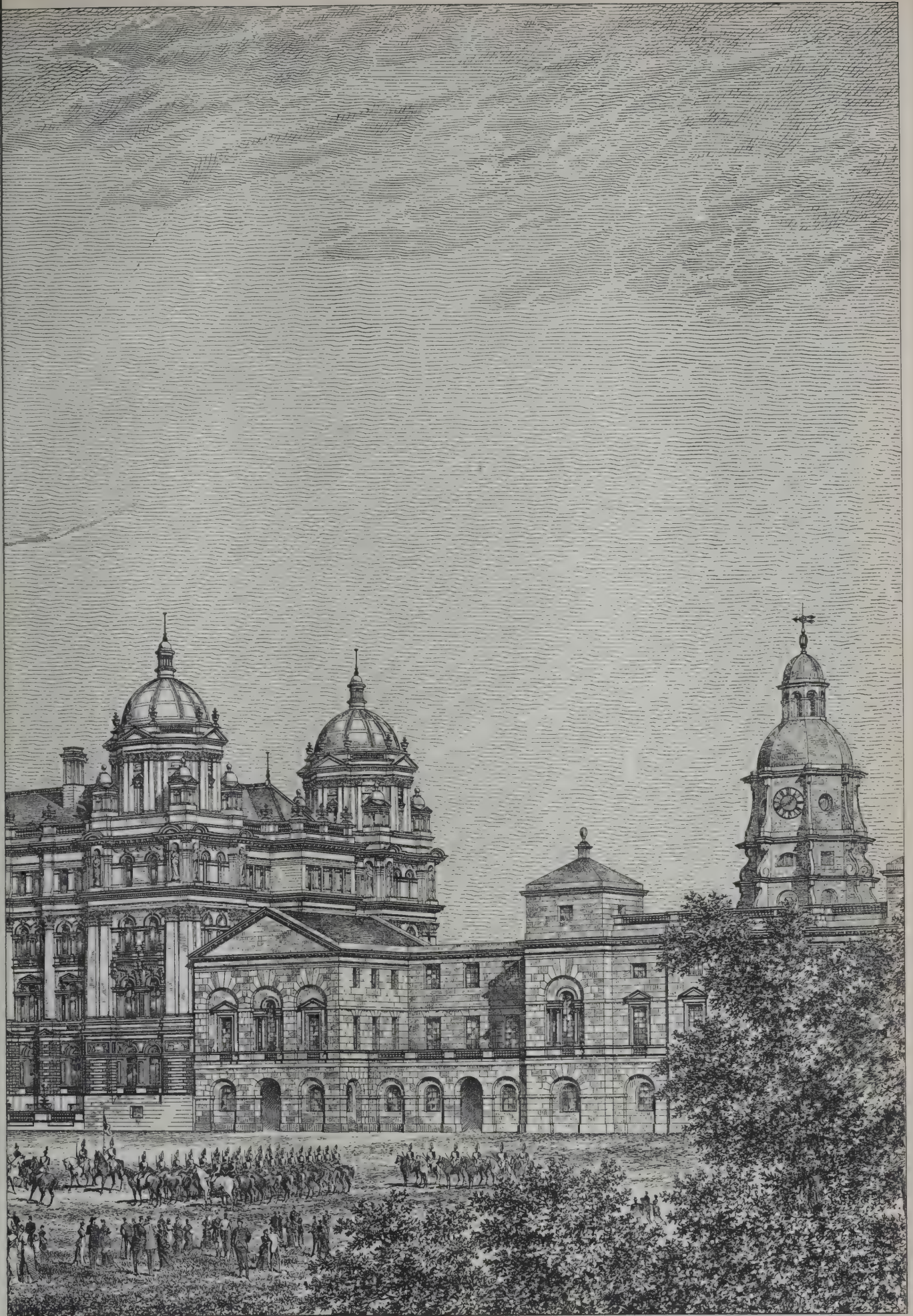




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## ILLUSTRATIONS.

DESIGN FOR ADMIRALTY AND WAR OFFICE.

WE publish this week two illustrations showing the design of Messrs. LEEMING & LEEMING in its perfected form. The design will be subjected to severe criticism in and out of Parliament—that is, if the House can, at the present juncture, find time to consider a subject such as art. We would point out to critics that when the design first appeared many people who were adverse to it became its supporters, and in a little time the amended design may also be able to convert opponents into friends.

## EDINBURGH ARCHITECTURAL ASSOCIATION.

ON Saturday last, about seventy members of the Association left Edinburgh by train for Roslin. The scene of the excursion was Roslin Chapel and Castle, and the party were under the leadership of Mr. Andrew Kerr, who read a paper. The lower chapel, which might be regarded as a separate building, with a priest's chamber on the south side, was, he remarked, said to have been erected by Lady Elizabeth Douglas, and dedicated to the Virgin Mary. The upper chapel, or collegiate church, was founded by Sir William St. Clair, third Earl of Orkney, on St. Matthew's Day (September 21, 1450), and dedicated to St. Matthew. The present chapel was intended for the choir of the complete building, which had been founded to its full extent. The foundations had been traced a considerable length, but those of the cross west wall were removed about the end of last century. The western part or nave appeared to have been intended to embrace a central, with a double aisle on each side, after the manner of the nave of Toledo Cathedral. The choir was confined to a single aisle on each side of the central one, and a double aisle at the east end, more properly a retro-choir, embracing four chapels. The entire arrangement of the choir was almost a repetition of that of Glasgow Cathedral, only Roslin Chapel had been more carefully studied in the elaboration of the ornaments. The plan of thirteen of the pillars was the same as that of those in the nave of Següenza in Spain. One special peculiarity of Roslin Chapel was the "horizontal arches" over the side aisles. In these, however, safety arches were concealed by a face ornament on each side. In some parts of the chapel there appeared indications of representations of religious or other allegories, and in the western compartments of the roof Scriptural teachings were plainly represented in the sculptures. Dr. Daniel Wilson, in his "Prehistoric Annals of Scotland," said that the Scottish Decorated period, to which Roslin Chapel belonged, prevailed between 1306 and 1500. Mr. Billing, the English architect, stated that Roslin Chapel combined the solidity of the Norman with the minute decorations of the latest species of the Tudor age; and in the "Baronial and Ecclesiastical Antiquities of Scotland" it was remarked that the chapel drew on the riches of almost every phase of Gothic architecture, except that which was contemporaneously present in England. Mr. Fergusson stated that there could be no doubt that the architects came from the north of Spain, and that the design of the tunnel vault of the roof was to be traced to the old churches in the south of France. The plan and section of the chapel were found to be designed upon and defined by certain principles of geometric proportion, in accordance with what was believed to have been the general practice of the period. The founder of the chapel was evidently a religious man, of high culture and extensive experience and observation in architecture, and that, keeping his purpose steadily in view of "erecting a most curious work of great glory and splendour," he gave effect to his observations by introducing them into his designs as opportunities occurred. The entrance to Roslin Castle had originally been protected by a trench and drawbridge, which were replaced by a stone arch about the end of the sixteenth century. The castle formed an irregular oblong square, with gardens at the south and east sides. On the left of the court was the "Lamp" tower, known by that name on account of signal-lights having been displayed from it. The keep or donjon tower at the south-west corner was erected towards the end of the fourteenth century, and the buildings on the west side connecting the towers were built about the middle of the fifteenth century. These contain domestic departments and a chapel. The buildings existing upon the north-east side were erected between 1597 and 1622, and were arranged for additional servants' accommodation, including a great hall with a fireplace of characteristic design. On November 11, 1688, a mob attacked and plundered the castle, and on the same night some portions of the chapel were defaced, the object being to burn the images and popish books.

The castle remains now much in the same condition as it was left by the mob in 1688.

At the conclusion of the meeting votes of thanks were given to the Earl of Rosslyn for his lordship's kind permission to visit the chapel and castle, the Rev. A. T. Grant for his attendance, and Mr. Kerr for the description of the buildings.

## ST. BARTHOLOMEW-THE-GREAT, WEST SMITHFIELD.

THE following letter on the subject of the restoration of St. Bartholomew's has been sent to the *Times* by the Rev. Precentor Venables:—

As one who for more than half a century has known and loved the grand old Church of St. Bartholomew, West Smithfield, I should be glad to be allowed to express the satisfaction I feel at the energetic action taken by the newly-appointed rector and his churchwardens, and other leading residents in the parish, for ridding the sacred building of the mean intrusions which have been too long permitted to mar its architectural effect and to degrade its religious character, and to offer my hearty wishes for the success of the work they have taken in hand.

As an historical and architectural monument this church has scarcely an equal in the City of London. As the church of a Priory of Austin Canons founded in the latter part of the reign of Henry I. (1123) by a brilliant young inmate of the king's court, named Rahere, on his conversion to a life of religion, it presents, in the words of the late Sir Gilbert Scott, "a beautiful specimen of the later Norman," of which style it is the only example still existing in London. The present church, it is hardly needful to say, is no more than a mutilated fragment of the once noble cruciform edifice. Of the nave only one bay stands. Both transepts are gone. A blacksmith's shop occupies the site of the north transept, and the din of his anvil resounds through the conventual aisles. The central tower has perished, but the stately arches which upreared it, two semicircular and two pointed, the latter accommodated to the two narrower sides of the lantern, still form the most striking feature of the interior. The apsidal aisle at the east end, long cut off from the church by a transverse wall, enclosing a dark lone house called "Purgatory," was thrown into the church some twenty years back. The upper part of the apse—or rather the space it once occupied—has been stolen by a fringe factory, which has been constructed within and upon the walls of the former Lady Chapel and now protrudes its shapeless mass into the church and actually hangs over the altar. The north triforium accommodates the parish school, and the whole edifice is encumbered on all sides by rickety old houses of the meanest sort, threatening a repetition of the conflagration of 1830, when several of the then existing conventual buildings perished, and the church itself was much injured and narrowly escaped destruction.

It will be remembered that this church witnessed the strange affray in 1249 between the young Savoyard, Archbishop Boniface, and his mercenary bands, and the sub-prior and canons, who were respectfully but firmly resisting the Primate's claim to visit their monastery officially, when the sub-prior barely escaped with his life from the blows of the Archbishop's fists; and a general conflict ensuing, the whole City was kindled by the uproar. The churchyard was in former days the scene of disputations of a more seemly kind between the scholars of the various schools of the City, of which old Stow speaks as an eye-witness.

Dissolved by Henry VIII., the existing church being preserved for the use of the parishioners, the religious foundation was revived for a brief space under Queen Mary, as a house of Black Friars or Dominicans, who began to rebuild the nave, their work being speedily cut short by the death of their royal patroness. Machyn's diary contains curious references to this period of its history. The church contains the monuments of Rahere, the founder of the priory, and of Sir Walter Mildmay, the founder of the "House of Pure Emmanuel," at Cambridge.

As has been already stated in the *Times*, an opportunity is now presented of restoring this historic building to some measure of its former dignity, and of freeing it from the mean secular interlopers which have been allowed to hem it in and actually to occupy what were once parts of the church itself, by the purchase of the fringe factory, which has been offered to the parochial authorities for sale at considerably below its market value. As the rector has stated, the days of grace, which had nearly run out, have been extended to May 15. Is it too much to hope that before that date arrives the whole sum required for the purchase, and for the complete restoration of this grand relic of old London, will have been raised? I am no lover of restoration (so-called) generally. This, however, is one which is absolutely needed if the church is to be rescued from secularisation and decay.



## WESTMINSTER HALL.

A PAMPHLET has been issued by the Society for the Protection of Ancient Buildings on the proposed restoration of Westminster Hall. The following extract will suggest its spirit:—

The group of buildings now forming Westminster Hall is, as described by the late Chief Commissioner in his speech before Parliament, in its present state a noble one, and, in the opinion of this Society, an immense improvement to the whole aspect of that part of Westminster; but the Society most earnestly feels it to be of the utmost importance that the case for the preservation of the ancient Hall be not made to rest only on the appearance which it presents, noble as it undoubtedly is. The Society maintains that original work of Rufus and of Richard II. having come into the possession of the nation, it is the duty of the nation to preserve that work in its integrity, whatever the appearance of it may be in the eyes of the present generation. The discovery of this original work of Rufus and of Richard II. is almost unique in the history of England. This Society cannot instantly remember another case in which a building for so many centuries so completely hidden has been brought to light in so admirable a state of preservation. Its contemporaries of the Middle Ages, and even the later work of Henry VII.'s Chapel, have been variously recased and restored; this fragment of the ancient palace of Richard II. comes to us, in parts of it, fresh from the hand of the mason. In parts of it, indeed, it has suffered severely from injudicious alterations and rough treatment, but that which has been spared is the genuine work of Richard and of Rufus, and still bears upon its surface the marks of the hammer which struck its stones into shape. A veritable relic of the ancient Palace of Westminster, it is as startling a revelation to modern London as would be to Rome the sudden reappearance of the ancient buildings of the Capitol, and it should be as venerable and as deserving of our utmost care and protection. The duty of the Office of Works, then, the Society for the Protection of Ancient Buildings respectfully submits, is the preservation of the ancient work absolutely as it is, without alteration or addition; or if, on examination, that be found to be impossible, or too dangerous, then with such alteration, addition, or repair only as may be necessary to the accomplishment of that end.

## TECHNICAL EDUCATION IN RUSSIA.

THE report which has been prepared by Mr. William Mather for the Commission on Technical Education gains additional interest at the present time, for it may be said to raise the questions of to what extent the interest of the empire is connected with industry, and whether the difference between factitious and genuine prosperity can be realised by the Russian people. Mr. Mather has been travelling in Russia for a period of twenty years, and he is therefore in a position to speak with authority.

Russia, he says, differs from all other European countries in not possessing some national system of elementary education. This may be accounted for by the institution of serfdom, which up to 1860 excluded what we should call the "working classes" from all rights beyond those accorded to them at the pleasure of their owners. Education in the most elementary form may, here and there, have been given in the villages by the priests if the proprietors permitted or encouraged it. In the towns no provision whatever was made by the authorities for the education of the labouring classes previous to the emancipation.

On the other hand, the Government has for many years paid considerable attention to the formation of educational institutions for the families of military and civil officials, the professional classes, and all grades of the nobility. To such institutions the sons of merchants have also been admitted, but the latter have had to depend chiefly on private tutors, and largely upon the advantages offered in other countries, or in Finland, the Baltic provinces, and Poland, which are politically parts of Russia, but retain to some extent their own social institutions, and have long possessed greater facilities for general education, in proportion to the population, than those existing in Russia proper.

In such towns as St. Petersburg, Moscow, Tver, Tula, Kharkof, Kief, Kazan, Saratof, and Odessa, colleges (Realschulen) and gymnasia have long existed, and in some of them also universities. There are not more than twenty towns in Russia proper having over 50,000 inhabitants, and not more than 150 having over 10,000. The urban population is extremely small compared with the whole number of inhabitants. Exact statistics are not easily obtained, but it is within the mark to state that not more than 10,000,000 out of a total population of about 80,000,000 dwell in what we should designate "towns," using this term in its narrowest sense.

The rest of the population is spread over a vast territory, in

small communities, pursuing rural occupations under conditions of agriculture and the holding of land, since the emancipation, which will yield enough, with something to spare in the most fertile districts, to those peasants who are frugal and thrifty. Notwithstanding that all the serfs received a grant of land with their freedom about twenty-two years ago, the inferior quality, or the want of means to improve it, has made it impossible, in a great number of cases, for the peasants to wholly maintain their families in their own communes or villages. Hence there is a great deal of migration, the heads of families move in search of employment to long distances, leaving children to the care or neglect of their relations. The parents will even separate one from the other, and live hundreds of miles apart from Easter to Easter, when all work ceases for one week to a month among handicraftsmen and in all kinds of manufacturing, and family reunions take place amid the religious festivals of the Russian Church. These migratory habits are on the increase since the extension of the railway system.

The only education at present available in the villages is a certain amount of instruction which it is the duty of the village priest to impart, but over which there is no control. There is no village where a priest is not stationed or a church does not exist. Sometimes a group of little hamlets a mile or two apart will have a church and one school in common. The priests are generally men of very meagre education, with large families, and a small quantity of land which they have to till, often with their own hands, to secure a livelihood.

It will readily be seen that such conditions are not favourable to education, even in the narrowest sense of the word. Some children acquire reading and writing imperfectly if they are naturally bright, but as there is no systematic superintendence of public instruction on the part of any authorities, the masses of the people are still growing up in ignorance, and the vice of intemperance is one of the most painful results of it. There are, however, some indications of improvement.

Taking the country as a whole, the mechanical arts and industrial pursuits, as distinct from agricultural occupations, are comparatively insignificant, and the resources of the country hitherto developed do not offer great facilities for such occupations. There has, however, been a good deal of ambition shown on the part of the Government to encourage by artificial means mechanical and manufacturing skill. The two great Imperial Technical Schools of Moscow and St. Petersburg have long been classed among the finest in Europe in point of equipment, and in possessing ample means. The museums and mining school of St. Petersburg have for many years afforded the opportunity for a high-class theoretical training in mining engineering, and contain a rich record of the mineral resources of the empire. A large civil engineering school has existed for many years at St. Petersburg; also a school for surveyors and hydraulic engineering. These schools were originally managed by foreigners—German or French—but for many years past the staff of teachers has been entirely composed of highly-trained Russians. The preparation necessary for students entering these institutions has been in the real-schools, progymnasia, and gymnasia, also established by the Government. In recent years some efforts have been put forth by private individuals to establish handicraft schools and manual training schools. Several of the large railway companies have also established small technical schools for the sons of their employes.

The Imperial Technical School of Moscow trains civil engineers, mechanical engineers, draughtsmen and foremen, and chemists. The complete course of studies is a combination of theory and practice. The theoretical studies are carried on in large class-rooms, amply supplied with all necessary apparatus for illustration. The practical lessons are given by means of manual work in workshop classes, specially arranged for exercise in the use of hand-tools, followed by the construction of simple machines, or parts of machines, in the workshop proper, comprising foundry, smithy, machine-tool and fitting department, and joiners' shop. The products of the workshop are sold or put into the museum. There is a loss of some hundreds of pounds a year on the sales. The foundry is probably the only department which pays its expenses, and here twenty-five regular workmen are employed to instruct students and make castings. About eight tons of metal a week can be turned out in castings. In all departments a few regular workmen are constantly employed.

The students work in the shops and laboratories not less than 12 hours a week. The smithy and foundry are not entered by students until the last year of the course, during which 100 hours are devoted to these departments. There is a special course for students who, for want of the natural ability to pursue theoretical studies, cannot get beyond the examinations of the third or fourth year, but who may nevertheless possess the practical and constructive faculty. The work given to the special class is all of the most practical character, such as the making of working drawings and full-sized drawings of parts of machines, making experiments on materials, working longer hours in the shops, and generally devoting their time to the



application of the knowledge they have gained in the more elementary branches of science.

The civil engineering students are much occupied in making what they term "graphic mathematical calculations"—a written description of some engineering work is given to the student of which he must first make a freehand general design, and then freehand sketches of each detail, with full dimensions, and with the necessary calculations worked out on each sheet for the correct construction of the whole work.

There is also an institute for the education of land surveyors, which is free. About 260 students attend, many of them being sons of poor Government officials. The staff consists of one director, one inspector, and thirty professors and teachers. The general education is good, followed by special instruction in land surveying, forestry, &c.

One of the most important institution in Moscow is the Stroganoff Central School of Technical Design and Museum of Art and Industry. This school was established by Count Stroganoff, with the assistance of the late emperor, who gave a property in Moscow of the value of 40,000*l.* as an endowment. It occupies a large and handsome house of Count Stroganoff's, and affords accommodation for about 400 art students of both sexes. The teaching staff consists of a president, M. Alexis d'Illine, ten professors, and three instructors. The fees are merely nominal. The institution is open to all classes from the peasant to the noble, the materials being found for the poorest students. The instruction is confined almost exclusively to drawing, from the earliest stages to its highest branches—geometrical, freehand, mechanical; drawing from objects, projection, perspective, Russian ornamentation, drawing from flowers and plants, the study of design as applied to the industrial arts, figure subjects, modelling the human figure, painting on china, water-colour and oil painting. There is a large collection of models and casts. A considerable number of the scholars are engaged in designs, chiefly for woven fabrics, and several Jacquard looms are employed for experimental effects. Modelling in clay is also taught, with all the necessary appliances. The chief result of the drawing school has been the training of teachers for schools, but many of the students have found employment in church decoration and the painting of icons, used so largely in the churches and in every household in Russia. Art exhibitions are promoted by this institution from time to time. It is capable of greater usefulness than it appears to accomplish at present. It lacks the interest of the wealthier portion of the public, necessary to make it all that its name implies. The school of design might afford an excellent training for designers in connection with the textile industries in and around the city, but hitherto little interest has been taken in it by the manufacturers to develop native talent in this direction for their own industries.

Probably the most important work performed by this institution since its foundation in 1860 is the commencement of a museum of art and industry, a sort of South Kensington in embryo. The most interesting and useful feature is the section devoted to the historical collection of Slavo-Russ art and Byzantine art. The specimens largely consist of facsimile copies of old manuscripts, the fruits of painstaking investigations by the Stroganoff school; also reproductions in plaster, and by oil paintings of ancient works of art, executed in metal, wood, stone, ivory, and woven fabrics, found in public and private collections, and in the churches throughout the empire.

In connection with this museum a remarkable work has been published, entitled "History of Russian Ornamental Art." It is illustrated with one hundred large plates, exquisitely coloured, representing many hundreds of the finest examples. "Russian ornamentation" is a branch of art peculiar to the country. It is a blending of the Byzantine, Slavonic, and Asiatic elements, forming a distinct style, and admitting of an infinite variety of designs of quaint beauty, which the gorgeous yet harmonious colouring renders extremely effective. The style dates from the tenth century, and its development follows the growth of the Russian Church. This truly national art of decoration has touched the whole people. It may be traced in the carvings and adornments of the peasants' huts, on articles of rudest furniture, in the embroidery of linen, silk, &c., and in the ornate national costumes of both sexes. It has produced a taste for rich colours in public buildings, dwelling-houses, upholstery, and wearing apparel, which is peculiar to the Russians to this day. In fact, in recent years a powerful revival has taken place in the study and application of the national art, which makes itself apparent in the newest productions of all manufactured articles and fabrics. The tendency of this movement is undoubtedly elevating and refining. It is evidently the ambition of the Stroganoff school to promote the study and practice of the art in connection with the industries of the country.

St. Petersburg is better provided with means of education than Moscow. There are, for instance, 156 elementary schools supported by the town authorities, and 25 high schools. The Technological Institute, which covers an area of 10,000 square yards, has 700 students in daily attendance. It is presided over

by Professor d'Illine, and enjoys a high reputation in Russia. There are sixteen professors and thirty-two teachers, besides instructors in workshops. About 150 students are free, and one-half pay only 5*l.* a year. The fees amount to 2,500*l.*, while the expenditure is ten times that sum. The students are admitted without regard to nationality or religion.

The Civil Engineers' Institute was established in the reign of Alexander I. It has accommodation for over 400 students. There are at present 250 students in attendance, of whom 190 pay 5*l.* a year. It occupies very extensive and handsome premises, which cost about 100,000*l.* It possesses an excellent library, a very fine collection of instruments and apparatus for physical science, a well-equipped chemical laboratory, a very fine museum and model-room, in which are models of the most important engineering works carried out in the empire, including canals, waterworks, buildings, railway bridges, docks, light-houses, &c. One important feature in the institution is a very fine experimenting room, to illustrate constructive engineering, the testing of beams, girders, columns, the strength of materials in torsion, tension, and shearing strains; the qualities of stone, bricks, and cement; the strength of timber and of appliances used in railway construction, hydraulic apparatus, and specimens of rails used in the construction of the Russian railways. The institution is under the control of a director, Professor Ghersevonof, an inspector, his assistant, twelve professors, eight demonstrators, and ten masters. The expenditure of the school is about 11,000*l.* a year, supplied by the Government.

This establishment gives a highly theoretical training in civil engineering by means of a course extending over six years. The students generally enter at nineteen or twenty years of age. The instruction is confined entirely to lectures and demonstrations in the lecture-rooms. Freehand, architectural and mechanical drawing are taught with great thoroughness, also higher mathematics, land-surveying, chemistry, and the principles of engineering science as applied to railways, roads, canals, docks, waterworks, and public buildings. The only practical work undertaken in the school is in connection with the mechanical laboratory, in experimenting upon materials used in engineering construction, and in the experimental construction of bridges by the use of models. In the summer months the students go out for surveying purposes along the canals and rivers, and in the country around the city. The works of railway companies are also visited, and the laying of the permanent way, and railway appliances generally, are inspected and reported upon. Nearly all the graduates of this institution pass into the Government service, and some are sent to remote distances in the empire to superintend the making of roads, bridges, &c. About two thousand young men have been passed through the full course during the last twenty years of its existence.

The Imperial Academy of Fine Arts offers great facilities, to all classes equally, for the study of drawing, painting, and sculpture in connection with the National Picture Gallery and Museum. A considerable field for the employment of artists and art students exists in Russia, owing to the decoration of churches with paintings of sacred subjects, and the demand for sacred pictures among all classes of the population. These are regarded as indispensable objects in every room, both of cottage and of mansion, and consist largely of paintings in oil. There is no doubt that the splendid galleries and rich collection of works of art at St. Petersburg have a great influence, though limited at present to the higher classes.

The educational institutions of Russia, even including those of Poland, Finland, and the Baltic provinces, are not sufficient to account for the intelligence and enterprise displayed by a large number of merchants and manufacturers and professional men. The facilities for education offered in Germany have for many years been appreciated and utilised by the middle classes of Russia, also the aptitude to acquire languages natural to the Russians has enabled those who had means to travel over Europe to collect information readily. The presence of a large number of foreigners of exceptional ability—German, English, and French—has promoted the rapid growth of manufacturing industries (within the limited field which the natural conditions of the country offer), and much is due to the spread of western ideas on all subjects.

It must, however, be admitted that Russia has produced some distinguished men in science, art, and literature. In the science of engineering the most eminent have been connected with the military and naval services, or some other branch of Government employment. Originality and boldness of conception have not been wanting in the public works executed during the last half century, though it is difficult to draw the distinction between foreign and native talent. Probably very few eminent men have been educated exclusively in Russia. It is almost essential for an educated Russian to live some time abroad to acquire several European languages. The scientific man, especially until recently, must have depended largely upon foreign books for his information, and, doubtless, with few exceptions, the most distinguished men outside the Govern-



ment service have received part of their education or experience out of their own country.

The principal of the Civil Engineering School at St. Petersburg has built some of the important bridges in the country. He derived his education from Russian sources. Naval construction has been the object of bold experiment by Russian engineers, adding to knowledge though not resulting in practical success.

Electricity has long been a favourite branch of science with Russian physicists, some of whom have experimented usefully in the direction more particularly of the application of electricity as a motive power. In quite recent times the name of Jabloschkoff entitles Russia to a very honourable position in the development of electrical science. The work of Jabloschkoff will always be recognised as having contributed to the rapid growth of electric lighting throughout the world.

In travellers, explorers, and geographers, Russia has furnished daring and cultured men, whose labours have brought under notice vast regions on her borders ready for the spread of commerce and civilisation. In the fine arts Russia has commenced a school which is already recognised as possessing distinct qualities of imagination as well as high technical skill. In the field of general literature the names of Russian authors are becoming widely known and deservedly honoured.

The masses of the people show the aptitude to learn quickly when well directed. They possess some excellent natural qualities—docility, endurance, obedience, veneration, and the faculty of imitation. They are rising in self-respect, and the spirit of emulation is growing fast. All these qualities only require quickening by systematic elementary instruction to create a new life in the people, leading to greater prosperity and morality. There is a strong desire apparent to be less dependent on foreigners, and if this could only be accompanied by a determination on the part of the authorities and the higher classes to extend educational and other institutions, on the principles upon which other great European nations have been built up, there is reason to believe that the great resources of this vast empire will be rapidly developed by an intelligent people for their own advantage and the welfare of mankind.

## Bygones.

*"Antiquity after a time has the grace of novelty."*—HAZLITT.

### BUILDING IN THE LAST CENTURY.

IT would appear from the following essay by the Rev. Henry Kett, which was written in 1787, that there was about that time a remarkable eagerness in England to erect new houses. Since all events are supposed to be repeated with regularity, it is to be hoped that opportunity may soon be given to university dons to indite similar lamentations to Mr. Kett's.

When Greece and Rome had emerged from barbarism to an exalted state of civilisation, a distinguished place among the arts was given to architecture. The accomplished Pericles, assisted by the refined genius of Phidias, adorned Athens with those temples, theatres, and porticoes which even in ruins have excited the admiration of posterity. After Augustus had established the peace of the Roman world, a similar display of magnificence was exhibited, and equalled, or rather surpassed, the glory of Athens. This memorable era of architecture is eminently distinguished by the elegance of the Palatine Temple of Apollo, and the sublimity of the Pantheon.

The progress of refinement from public to private works must necessarily be private houses, because nothing is more natural to man than imitation, particularly of that which is the object of his wonder and applause. They who daily surveyed such edifices as were remarkable for capriciousness and grandeur, projected the erection of similar structures upon a more confined plan. Their designs were frequently carried to such an excess in the execution as to pass the limits of convenience and economy, and give a loose to the sallies of ostentation and extravagance. From this source was derived the just indignation with which Demosthenes inveighed against the degenerate Athenians, whose houses eclipsed the public buildings, and were lasting monuments of vanity triumphant over patriotism. The strictures of Horace flow in a similar channel, and plainly indicate that the same preposterous rage for building prevailed among the Romans. Even if we make allowance for the hyperbolic flights of the lyric muse, we must still suppose that vast and continued operations of architects were carried on by land and water, "since a few acres only were left for the exercise of the plough, and the fish were sensible of the contraction of their element."

The transition from the ancients to the moderns is easy and

obvious. It must be confessed, that, like servile copyists, we have too closely followed the originals of our great masters, and have delineated their faults as well as their beauties. The contagion of the building influenza was not peculiar to the Greeks and Romans, but has extended its virulence to this country, where it rages with unabating violence. Neither the acuteness of Pott, nor the erudition of Jebb, are necessary to ascertain its symptoms in various parts of England. Bath, Bristol, Cheltenham, Brighton, and Margate bear evident marks of its wide diffusion. The metropolis is manifestly the centre of the disease. In other places the accumulation is made by occasionally adding house to house, but in London street is suddenly added to street, and square to square. The adjacent villages in a short time undergo a complete transformation, and bear no more resemblance to their original state than Phyllis the milk-maid does to a lady mayoress. The citizen who twenty years ago enjoyed at his country seat pure air, undisturbed retirement, and an extensive prospect, is now surrounded by a populous neighbourhood. The purity of the air is sullied with smoke, and the prospect is cut off by the opposite houses. The retirement is interrupted by the London cries and the vociferations of the watchmen. In the vicinity of the capital every situation is propitious to the mason and the carpenter. Mansions daily arise upon the marshes of Lambeth, the roads of Kensington, and the hills of Hampstead. The chain of buildings so closely unites the country with the town, that the distinction is lost between Cheapside and St. George's Fields. This idea struck the mind of a child who lives at Clapham with so much force, that he observed, "If they go on building at such a rate, London will soon be next door to us."

A strong light is often thrown upon the manners of a people by their proverbial sayings. When the Irish are highly enraged, they express a wish which is not tempered with much of the milk of kindness, by saying, "May the spirit of building come upon you." If an Irishman be once possessed by this demon, it is difficult to stop his progress through brick and mortar, till he exchanges the superintendence of his workmen for the confinement of a prison. But this propensity is not merely visible in the environs of Dublin, or upon the shores of Cork; it is equally a characteristic of the *sister kingdom*.

England can furnish not a few instances of men of taste who have sold the best oaks of their estates for gilding and girandoles—of fathers who have beggared their families to enjoy the pleasure of seeing greenhouses and pineries arise under their inspection—and of fox-hunters who have begun with a dog-kennel, and ended with a dwelling-house. Enough is every day done by the amateurs of Wyatt and Chambers, to palliate the censure of ostentation and uselessness that is lavishly thrown upon the king's house at Winchester, and the Radcliffe Library at Oxford.

My cousin, Obadiah Project, Esq., formerly a respectable deputy of Farringdon Ward Within, retired into the country, when he had reached his grand climacteric, upon a small estate. While he lived in town his favourite hobby-horse, which was building, had never carried him further than to change the situation of a door or erecting a chimney. On settling in his new habitation, as he was no sportsman, he found himself inclined to turn student. His genius led him to peruse books of architecture. For two years nothing pleased him so much as "The Builder's Complete Guide," Campbell's "Vitruvius," and Sandby's "Views." All these heated his imagination with the beauties of palaces and delighted his eye with the regularity of the orders, for which he felt a vague and confused fondness. He had, perhaps, no more idea of the distinction between a cornice and a colonnade than the monstrous craws. Unluckily, Sir Maximilian Barleycorn was his neighbour, who had lately erected a house upon the Italian plan. As my cousin was laying out his garden, he found that the soil was composed of a fine vein of clay. It immediately struck him that bricks might be procured at a very cheap rate. The force of inclination, combined with rivalry and encouraged by opportunity, is too powerful for man to resist. He, therefore, flew to tell his wife of the grand discovery, and inveighed with much warmth against the smallness of their parlour, the badness of the kitchen floor, and the ruinous state of the garrets. She mildly represented that they had no money to throw away upon a new house, and that the old one might cheaply be put into repair. Her remarks had just as much effect as the advice of the barber and the curate had upon Don Quixote. The next day he played Geoffrey Gambado, by taking a ride to consult Mr. Puff, the architect. Mr. Puff was confident that the old house must fall down in a day or two, and proposed the following plan for a new one, which exactly reflected my cousin's ideas. The rooms were to be all cubes. In front, a Venetian door, with a portico supported by brick pillars, with wooden capitals, and six bow windows. A balcony was proposed, but afterwards given up because it was vulgar. My cousin retired to a neighbouring cottage. The old house was pulled down, and the brickmakers began their operations. Unfortunately the wind happened to blow in such a direction as to create much annoyance with clouds of smoke from the kilns. Whilst my cousin was half-suffocated



and half-buried in rubbish, Sir Maximilian Barleycorn and his lady came to pay a morning visit. They entered the cottage just at the moment when Mrs. Project was setting the boiler upon the fire, and her husband was paring potatoes. They were obliged to perform these offices for themselves, because the only servant for whom they could find room had been turned off that morning for abusing carpenters and masons. Sir Maximilian hastily took his leave, and swore by his knighthood "that apes were the lowest animals in the creation." My cousin had calculated that, as he burnt his own bricks for home consumption, they would not be subject to any tax. An exciseman undeceived him before the house was finished, by hinting that he had incurred a heavy penalty, which he was obliged to pay. He contrived, however, to keep up his spirits by marking the progress of his house and the improvements around it. Not far from the Venetian door was a horsepond, which the genius of Project enlarged into a circular piece of water. He requested his friends to suggest the most tasty ornaments. One proposed a shepherd and shepherdess upon a pedestal in the middle; another observed that if Farmer Peascod's gander could be placed in it when company came, they would give him credit for keeping a swan; a third, whose notion of things was improved by frequent visits to Vauxhall, was sure that a tin cascade would look very pretty by moonlight. Project, not liking to take up with one good thing when four were to be had, resolved to adorn his water with them all. He soon after removed into his new habitation, long before the walls were dry. An ague and fever were the consequence of this rash step. His fever was probably increased by Puff's bill, to pay which he sold the greater part of his estate. During his illness he gradually awoke to a sense of his late imprudence, requested the forgiveness of his wife for not listening to her advice, and begged me to impress his dying injunctions indelibly on my memory:—"Never build after you are five-and-forty; have five years' income in hand before you lay a brick; and always calculate the expense at double the estimate."

### AN OLYMPIAN VICTOR.

A DESCRIPTION has been given by the *Times* correspondent of the bronze statue which was found in Rome on February 8, in the course of the excavations for the new national theatre on the brow of the Quirinal, overlooking that part of the Via Nazionale of the actual city which joins the end of the Corso and the Piazza Venezia, or the southern extremity of the Campus Martius of ancient Rome. The site was that where stood Hadrian's Temple of the Sun and Constantine's Thermæ in close vicinity to each other, and the statue was found lying in a mass of *débris*, together with some drums of small fluted columns of tufa.

Its recovery, therefore, is an event of the highest artistic and archæological interest and importance. But, more than that, it is the most important discovery of the kind that has yet been made, from the fact that it is the first complete bronze statue of undoubted Greek workmanship—that is, wrought in Greece by one of the great masters of antiquity and brought thence to Rome, probably a victor's trophy—that has yet been discovered. In Rome, of all the works of all that crowd of sculptors who wrought in bronze of whom Pliny, Pausanias, and others have left us the names. It is an iconic nude statue of a victorious athlete standing erect. The weight of the body rests upon the right leg. The left is slightly flexed. His right hand is placed behind his back in the position of that of the *Mercury* of the Belvedere. His left is held aloft, and his gaze turned towards the right. The statue is fractured cleanly across the left shoulder and the right thigh. The left knee is broken across and some pieces detached, and the right foot is rather badly shattered; but all the pieces of the statue have been found, excepting only the index finger of the raised hand and the object that hand evidently held. The bronze, particularly as regards the head, arms, and body, is in a fine state of preservation; but the legs from the knees downwards are a good deal corroded and encrusted. In point of art it is a grand piece of modelling, in which the hand of a great master has done justice to one of those splendid specimens of the human form in full training which the Olympian and other games offered to the Grecian artists. The model and the sculptor were worthy of each other. It would be difficult to over-rate the physical symmetry of the one or the talent of the other. Like all the statues of victorious athletes this is a portrait from head to foot; a life-like breathing portrait. The face is handsome and replete with animation and individuality. The sockets of the eyes are hollow, the balls having been originally of smalt or other similar material. The frontal sinus is strongly developed, giving the forehead a somewhat retreating line, and the nose is slightly aquiline. The mouth and rounded chin are particularly well formed.

It is impossible to look upon this statue, and still more to

examine it in detail, without being reminded of Pliny's description of the characteristic which marked the works of Lysippus. It answers to that description in every point. The head is small, and if the sculptor has flattered his model in any respect it has been by an imperceptible lengthening of the lower extremities, to be detected only by measurement, which gives the figure additional lightness. The details of the hair upon the head and body are rendered with peculiar care. The thighs especially, and other fleshy parts are modelled with much roundness of treatment, while the planes are not neglected; moreover this statue is peculiarly remarkable for the careful manner in which even the smallest details are treated, as for instance the creases, or crease lines, on the neck, abdomen, and elsewhere, and the folds of the flesh under the knuckle of the little finger as it closes on the palm.

This briefly is an exact description of the style in which this statue is wrought, and by turning to Pliny's "Natural History," lib. xxxiv., c. 19, you will find that what he says of Lysippus's work tallies strikingly with it.

The treatment of the hair of this athlete is very remarkable. He is a young man around whose chin the razor has not yet played. The down on the cheeks and chin has just become soft, short hair, beginning from above the corners of the mouth. This is all delicately engraved upon the bronze in a variety of gentle curves, which could scarcely have been better placed had each hair been studied. The hair under the armpits is treated in the same way. On the head the hair, cut short, is divided into slightly-curved locks corresponding in style exactly to the treatment of the hair on the head of the marble copy of the *Apoxyomenos* by Lysippus found in 1849, and now in the Braccio Nuovo of the Vatican Museum; but in this bronze each lock of hair has been carefully tooled over and finished with the graver. Above the pubes the modelling and treatment of the hair are the same, and that on the eye-brows is also well defined in relief. There is a marked similarity between the modelling of this statue and that of the *Apoxyomenos*, and taking all these things together we may be convinced that in this bronze we have before us a veritable original statue by Lysippus, the only one of the 1,500 bronze works he is said to have executed that has come to light.

On the plane just above the navel, some figures and letters of about one-third of an inch in height have been punched on the bronze with a chisel of that width, excepting one that has been incised. They read as follows:—L·VII·S·L·XXIIX. Their meaning has not yet been made out, but they have a close resemblance to the figures and signs placed on the blocks of marble and roughly hewn columns as they were sent in ancient times from the quarries to Rome, and these, in like manner, may give the number and other indications of the lot of works of art to which this belonged, and corresponded, perhaps, to the entry on the bill of lading of the galley which brought it to Rome.

In some of the places where the statue is now fractured there must have been cracks or shakes, caused probably in the transport, which had been most carefully and delicately repaired with rectangular plates of bronze with dovetail ends let into the surface of the statue, with such delicacy and care that they are not easily recognisable on close examination even now.

In one respect, that of height, this bronze differs from the statues of other athletes. Those of which we have ancient copies, including the *Apoxyomenos* by Lysippus, are all of life-size, while this stands 6 feet 10½ inches in height.

### ROMAN ARCHÆOLOGY.

A CORRESPONDENT of the *Scotsman* gives an account of his conversation with the late Mr. H. A. J. Munro, who was recognised as one of the first Latin scholars in Europe, during the few days he spent in Rome before his sudden death. He put up at the Quirinal Hotel in preference to the Angleterre, which he had frequented on his previous visits, and there, says the correspondent, I first saw him on Saturday, March 14. He looked slightly jaded, with dusky complexion, and complained of loss of appetite, but otherwise felt no impairment of strength, being quite equal to a two hours' brisk walk, and to maintaining a lively conversation. On his suggestion, we proceeded at once to the Forum, stopping on our way through the Via Nazionale to look at the Porta Fontinalis, the old Servian gate, in nearly perfect preservation from its having been enclosed by, and partly buried under, buildings apparently belonging to the end of the first century, since which date it had been disused. We passed through the Forum of Trajan, and he criticised the famous column, pointing out the futility of its ornamentation in relief, which could not possibly be seen or taken in by the spectator, whose only knowledge of the scenes and figures represented was derived from drawings. On gaining the Forum Romanum we proceeded at once to the Atrium of Vesta, and he was greatly struck with its spacious proportions and the sculptured figures



of the virgins—some of them in good preservation—with the inscriptions placed beside them, recounting their services to the sisterhood and the State. Returning into the centre of the Forum, he remarked that the German theory as to the site of the Temple of Jupiter Capitolinus—namely, that it stood on the southern peak of the hill—was not in every point substantiated, and he referred to a recent article in "Hermes" calling in question the accuracy of Jordan's measurements of the supposed sub-structure of the Temple. He admitted, however, with Burn that the direction of Caligula's Bridge from the Palatine to the southern peak of the Capitoline was a very strong argument on the German side. Jordan's style he thought detestable, and seemed inclined to think with Professor Ihne that when an Englishman, fairly familiar with the German language, has difficulty in translating a treatise in it, the fault is the author's, not his. He greatly deplored the premature closing up of the eastern side of the Forum, as its promised excavation would have cleared up many interesting questions as to the topography of the place. He passed a severe judgment on the Italian architect Rosa, whose indications of localities on the Palatine had in so many instances proved erroneous. From the Forum we rambled up the Quirinal, and parted at the house of Scanderbeg, that "hammer of the Turks" in the fifteenth century, whose likeness, full of energy and sagacity, he admired as depicted on the façade.

Next day he called on me in the Corso, and we went at once to the Palatine, where we strolled for two hours, remarking on the rapid decay of the old tufa-walls of Romulus, which, unless protected by some method, will scarcely exist by the close of the century. As we paced the magnificent tablinum, peristylum, and triclinium of the palace of Domitian, and the noble belvedere of Septimius Severus, the sight of the Alban and Sabine hills suggested excursions into those interesting uplands—one especially to Horace's farm, if only to disprove Rosa's theory, which places it on the height above and beyond Roccagiovine, instead of lower down in the valley of the Digentia. But, alas! none of those pleasant expeditions was he destined to enjoy.

## ANTIQUE CARVING AND FURNITURE.

THE object of a course of four Cantor lectures, just delivered at the Society of Arts by Mr. John Hungerford Pollen, was to revive the art of wood-carving in its application to the fittings of houses and public buildings. There were, the lecturer said, good carvers to be found in London and other towns, but their skill was no longer applied, as it had been in former times, to the walls, window-frames, fireplaces, and doorways of London and country houses. Let them look at Old London, now going fast to pieces, and see what treasures were brought from those streets and houses, and bought at high prices for the museums of our towns, or used by those whose means enabled them to fit up their rooms with fireplaces and panelling no longer made as ordinary articles of trade. This country was provided with an excellent school, rather with numbers of schools or guilds, of carvers in the Middle Ages. We saw their work in the stalls of many of our cathedrals. Those of Winchester might serve as an example of a period when Pointed architecture was at its best, or nearly so; while the figure work under the *misereres* of Henry VII.'s chapel in Westminster was not to be surpassed by that of any contemporary building on the Continent. Though executed at a period of architectural decay, those stalls were marvels of bold design, lightness, and delicacy of execution. The Renaissance was as fertile in graceful work as it was in painting and sculpture. The Kensington Museum was rich in chests, chairs, cabinets, and dressers of this fruitful period. Those of Italian make in walnut were the boldest, and showed the highest attainments as to figure sculpture on the supports and surfaces. It was there that we learnt the use made of the acanthus leaf. Not only was it of universal service in lines of moulding and the capitals of columns and pilasters, on whatever scale, but we found it married to portions of the figure, or to whole or portions of animal life, and bringing these lifelike elements into connection with borders, edges, lines of moulding, which made up the composition of furniture of this description. The general arrangement and mutual connection of the mouldings borrowed from the monuments of antiquity were never lost in the work of the sixteenth century. Their typical functions as elements of shelter or of support marked them out for upper or cornice uses, or for lower or base and dado service. Down to the latest times architects and carvers remembered and felt these proprieties, and a certain completeness and harmony were never wanting to these commonplace elements of decoration while this traditional order and connection were maintained. Moulding with the kind of decoration proper to their several contours formed, after all, the chief feature in all carving arrangement, whether in that of chimneypieces and door frames or the composition of pediments and porches. The seventeenth century, again, with its Elizabethan mansions,

most of them built during the peaceful reign of James, spoke to us of carved woodwork. The great hospital halls with their screens and fireplaces, the burly grotesque figures of support, the pierced and latticed strap-work, the massive stair newels surmounted by heraldic monsters or sculptured figures, often of great excellence, seemed to welcome us in hearty and homely language, and to remind us of the happy and noble country life and the kindly family ties of the England of old times. Gradually the influence of the splendid and pompous Court of Louis XIV. sheared away this ample and massive treatment of wood and furniture. Carved cabinets and massive stair balusters gave place to the metal and shell marquetry of Boule, to silver hammered work in the houses of the rich, and veneered woods for more modest fortunes. Of the former and its splendid surface, too much could not be said. This phase of old furniture the lecturer well illustrated by examples, objects of various shapes and uses now in private hands. Then came the age of Martin and his "Vernis," of Riesener, the metal-work of Gouthière, Chipendale, Sheraton, Heppelwhite, and many others. The graceful work of Gibbons was shown by illustrations taken from the carvings at Petworth House—musical instruments, fruits, bearded wheat, antique vases with reliefs round them, lace, medals—perhaps the most varied examples of the skill of this great artist that could now be pointed out. Sir William Chambers, like Wren and Jones, gave a special character to the wood fittings of the houses and churches which he designed. So, also, it may be said of the Brothers Adam, the architects of the Society's house in John Street, Adelphi. They designed every portion of such houses as Derby House, Grosvenor Square (now destroyed), and Lansdowne House, Berkeley Square, down to the sideboards, wine-coolers, hall tables, looking-glass frames, &c. Some hopes might fairly be entertained of the red-brick architecture now growing into fashion, and the reviving love of the fashions of the last century. Wood-carving must find its way into these structures if the taste for a past so decorative was not to prove an unreality, and there were some evidences that this branch of art was making its way once more to the front.

The lectures were illustrated by photographic transparencies projected from the magic lantern, many of them taken from the more noteworthy pieces in the South Kensington Museum.

## PETERBOROUGH CATHEDRAL.

ON the 27th ult. the Archbishop of Canterbury sat at Lambeth to arbitrate between the canons of Peterborough, who were represented by Canon Argles and Archdeacon Thicknesse, and the Restoration Committee representing Mr. Moncton and Mr. A. Percival. The *Morning Post* says: the canons contend that the sole charge of the fabric of the cathedral is vested in the Dean and Chapter, and that they have merely exercised their right as a majority of the corporation in refusing to sanction a change in the plan which all had so long concurred in adopting; that by becoming members of the Restoration Committee they never intended to divest themselves of their responsibilities as canons; that they were not obliged to follow the opinion of their architect, whose new plans were not ordered by the Dean and Chapter; and that they have endeavoured to effect a compromise. The Chapter object to the proposed change of plan with regard to the central tower as (a) breaking their engagement with subscribers; (b) as leading to greatly increased expenditure; and (c) as destroying Pointed arches introduced subsequently to the Norman period. They believe it to be their duty, as custodians of the fabric, to preserve as far as possible and reproduce all architectural changes, such as those made in the fourteenth century, which form part of the history of this cathedral and of the progress of ecclesiastical art. The Restoration Committee (with whom Dr. Perowne agrees) argues, on the other hand, that the Dean and Chapter are included in and incorporated with the Restoration Committee, and are not treated as a separate body. They admit that the original contract bound the contractor to take down the central tower and to rebuild the same in the form in which it existed; but they say that, as the works progressed, the condition of the western arch and remaining piers of the tower was found to be so bad that the architect reported it absolutely necessary to take down and rebuild them also. This gave rise to Mr. Pearson's fresh plans, and the committee entered at length into architectural details of the work. They further pointed out that the property of the Chapter is exempted by the contract from liability for the work, and that they, like similar committees, are entitled to a real voice in and control over the works to be executed. In some supplementary observations on behalf of the committee, the views of the canons throwing a doubt on the value of their resolutions because of the non-attendance of members are canvassed, and it is affirmed that if it had been understood that the function of the com-



mittee was only to collect funds, none would have been formed. They further say that the public rely largely on the skill and judgment of the architect, and his views should not be lightly disregarded; that only one subscriber has remonstrated against their proposal, and that the committee have faith in the liberality of their subscribers. The following is an important passage in their case, under the heading "Attempts at Compromise":—

"It does not appear to be denied that each member of the Chapter nominated an expert, and that afterwards another expert was selected by consent. This may account for the fact that the opinions of five appear to agree with those of the individual selectors, while that of the sixth (who was selected by the whole body) happens to coincide with the view of the committee. The canons say the new plans were not theirs, neither were they originated by the committee. They were the suggestions of the architect—devised in consequence of the discoveries made in taking down the piers—the original plans were prepared on the assumption that none of the piers would be taken down. Until they received the canons' statement the committee were not aware that the placing of a Norman arcading had originally been suggested by Mr. Pearson. This, however, shows that the idea of additions to and alterations in the tower have throughout been contemplated and suggested by the architect, and the committee think their statement is fully confirmed, that 'as the Chapter gave way on the question of the Norman arcading, the difference was reduced to the question whether the restored arches should be Norman or Pointed.'"

The *Northampton Herald* says the archbishop grasped the subject in a thoroughly masterly way, and asked questions all round. Nothing could have exceeded his patience, and both sides most heartily thanked His Grace for his great and ready kindness in undertaking the usually very thankless task of arbitrator. He said at the conclusion of the hearing that he would send his decision in writing to the chapter clerk, and that he had made up his mind as to the relation that ought to exist between the Chapter and the Restoration Committee. He had seen and examined the clerk of the works and the contractor, and had before him all plans, photographs, and models. The case on either side had been drawn and printed, and copies interchanged, and everything had been done to facilitate the proceedings, and to place everything before the archbishop.

## STRATFORD-ON-AVON PARISH CHURCH.

THE first step towards the restoration of this church, which is estimated to cost 12,000*l.*, has just been taken by the erection of a wooden structure on the north side of the choir. This is intended to represent the proposed new vestry, the object being to enable the committee and public to form an idea as to the appearance of the building if erected upon that site. A similar structure has been put up on the south side of the chancel, which is the alternative scheme. It is necessary that the precise locality of the new building should be described in the Faculty which is about to be granted by the Bishop of the diocese. Opinion seems to lean in favour of the north side of the chancel as the site of the new vestry. The doorway close to Shakespeare's tomb shows the position of the ancient sacristy, underneath which was the old charnel-house, erected in the fourteenth century, and demolished about eighty years ago. Several tons of human bones have been discovered in the crypt on this site, and it is proposed that these shall be buried elsewhere, should the committee decide upon the ancient arrangement.



### Chelsea Vestry Hall Competition.

SIR,—Being one of the competitors in the above, I think it only right and just, in fairness to others who might not have the opportunity of viewing the drawings (which are open this week to public inspection at the Cadogan Club, next Vestry Offices), to draw their attention to the fact that two out of the three sets, viz., Nos. 14 and 26, chosen by the assessor, have not complied with the instructions, having sent in coloured drawings, although it was specifically laid down that the "drawings are to be finished in line in Indian ink."

I wish to ask you, sir, what good instructions are if they are to be so flatly ignored, and also what good are "professional assessors" who allow such things in dire contradiction to the same, as I have mentioned?

FIAT JUSTITIA, RUAT CÆLUM.

### Granite.

SIR,—Geology, and more particularly chemical geology, are comparatively young sciences. It is not, therefore, very surprising that difference of opinion should now and then manifest itself among the professors; and for the sake of the truth, you may perhaps be glad to quote what the Keeper of Mining Records (R. Hunt, F.R.S.) has to say on the weathering of granite, although he differs from Professor Newberry (Tesserae, April 4):—

"It has been stated that the disintegration of granite was due to the decomposition of the feldspar, and that thus china clay (kaolin) was produced. I am prepared to prove that such was not the case, and that, so far as human observation can determine, china clay never was true granite; and also that atmospheric decomposition acting upon feldspar had never gone to the depth of 300 feet, where the finest clay is found. I have gone over miles of country strewn with feldspar."

From this we must conclude that it is an error to assume, as is often done, that the existence of kaolin is a proof that granite is perishable. The truth seems to be that, from some cause with which we are unacquainted, the formation of granite in certain parts of the earth's crust was ages ago suddenly arrested, with the result that we possess a commodity of the greatest value to industrial art. There is, of course, no practical difficulty in distinguishing granite from kaolin; and granite quarrying has been carried on upon such good principles of late years that there need be no fear of the absolute durability of the output.—Your obedient servant,

PETRUS.

## ARCHÆOLOGY.

**Chapel at Oakley Park.**—Excavations have been lately undertaken in "The Chapel Field," on the Oakley Park estate, Felton, near Ludlow, and, at about two feet below the surface, a floor laid with ornamental tiles, such as were used in ecclesiastical buildings about the fourteenth century, was discovered. On further investigation the entire foundation walls of the building were laid bare, which were 2 feet thick, forming an oblong building, 19 feet 8 inches broad by 27 feet 6 inches long. The east end is semicircular, forming an apse, the radius of which is 5 feet 8 inches, the wall here being 3 feet 10 inches thick. At the termination of the semicircle is the base of a circular pillar, 2 feet 6 inches in diameter.

## SANITARY WORKS.

**Public Baths, Stockport.**—At the award in this competition, made some months since, the design submitted by Mr. J. C. Prestwich, architect, Leigh, near Manchester, was placed first, subject to estimates for the work being obtained by the corporation within the stipulated sum of 5,000*l.*, given in the instructions to competing architects. The Sanitary Committee of the borough met on the 6th inst., when tenders were opened, the whole of which will be found in our list of tenders, the lowest and accepted being one for 4,865*l.* The work will be at once proceeded with under the supervision of the architect.

## CHURCH BUILDING AND RESTORATION.

**Farnley.**—The chief stone of St. Michael's Church has been laid. The church is built in the place of one erected in 1761, which has become too small for the requirements of the parish. It will be a stone-faced structure, with traceried windows, and will have a wood porch, buttressed sides, and picturesque outline. It is designed to suit its special position, which is surrounded by the thick belt of forest trees forming the boundary to Farnley Park. If ever the munificence of those interested in the edifice enables a tower to be added, there will be few more charming churches. The building will consist of nave, north and south aisles, chancel, organ-chamber, and vestries. All the walls of the interior will be faced with buff-coloured terra-cotta blocks supplied by the Farnley Iron Company, the surface of which will be varied by one or two bands of ornamental work. All the columns, arches, and other stonework of the interior will be of red stone. The architects are Messrs. Chorley & Connon, of 15 Park Row, Leeds; the builders being:—Masons, Messrs. Wood & Sons, Churwell; joiner, Mr. J. Taylor, Yeadon; plumber, Mr. J. Woffenden, Leeds; slaters, Messrs. Sharp & Harper, Leeds. The entire cost of the building will be about 3,900*l.*

**Corley.**—The little church at Corley, formerly belonging to the Priory of Coventry, has been reopened after restoration, carried out under the direction of Mr. John Ladds, of Chapel Street, Bedford Row, by Mr. Wright, contractor, Foleshill.



The building illustrates four distinct periods of ecclesiastical architecture. In the nave are the remains of two Saxon windows, supposed to date from the year 900, and two Norman arches, considered to date from the year 1100; the chancel is in the Early Decorated style, and the north aisle of the Late Decorated period. Over the centre of the edifice is a bell tower containing five bells, the oldest of which is said to date from the year 1350, and another from 1641.

**Manchester.**—The reredos erected in St. Matthew's Church, Ardwick, Manchester, in memory of the late and first rector, was unveiled on Saturday before evensong. The central feature is a cross of white alabaster, 6 feet high, with a background of red-veined marble, which stands under a boldly-projecting canopy, supported by two circular pillars. At either side of this central cross and canopy are two arches, with backgrounds of coloured alabaster, which contain carvings emblematical of the eight Beatitudes. On each side of the head of the canopy are five cusped arches. A battlemented cornice completes the structure at top. Immediately above the Lord's table is a shelf of red marble, and beneath the foot of the cross are carved the words, "Till He Come." The narrow spaces between the reredos and the north and south walls of the sanctuary are filled with a diaper of terra-cotta and stone. The reredos proper is 15 feet wide and 15 feet high. The entire width of the work, including the diaper at the sides, is 19 feet 6 inches. The design has been made by Messrs. Medland & Henry Taylor, architects, of Manchester, and the work has been carried out by Messrs. Earp & Hobbs, under the superintendence of the architects.

**Penningley.**—The old church of Penningley, Notts, has been reopened after restoration carried out under the direction of Mr. C. Hodgson Fowler, of Durham. The date of the foundation is supposed to be anterior to the Conquest, the south porch being a fine specimen of Saxon work; the western tower, probably 1180, opening to the nave by double doors; the chancel is a fine example of Early Decorated. Under the south window are triple sedilia and double piscina, the chancel arch showing signs of fire. On the oak altar frame has been placed the original stone mensa found in relaying the floor. The south porch has been entirely rebuilt. The cost of the work has been 1,380*l*.

**Queensbury.**—Holy Trinity Church, Queensbury, has been reopened after restoration. The additions to the church are in keeping with the style of the main structure, which is Early English. They consist of a chancel and north and south aisles. The south aisle is devoted to an organ-chamber and choir vestry, with a clergy vestry beyond. The chancel is divided into three bays, the well-moulded arches resting on clustered columns, with carved capitals; and it is lined with dressed stone. The ceiling is of pitch pine. The restoration has been carried out from designs by Messrs. Healey, architects, Bradford, former members of whose firm were the architects for the church when it was first built. The contractors were:—Masons, M. Firth & Son, Queensbury; joiners, James Wilson & Son, Bradford; plumber, B. Stocks, Queensbury; slater, James Smithies; plasterer, B. Dixon; painter, E. Harland. The iron and metal work has been supplied by Messrs. Dutton & Powers, of Manchester; the oak stalls, &c., by Messrs. Marsh, Jones & Cribb, of Leeds. Messrs. Farmer & Brindley, of London, did the stone carving.

**Scarborough.**—The memorial-stones of the Wesleyan Methodist Chapel, which is being built on the South Cliff, have been laid. The chapel is designed in the Decorated style of Gothic architecture, and will consist of nave, transepts, and chancel, which, together with an end gallery over the vestibule, will accommodate about 550 persons. A large lecture-room and two class-rooms are arranged at the back of the chancel end, the organ chamber opening into the nave and chancel with wide arches. A handsome spire will occupy a prominent position at the south-west corner. The architects are Messrs. Morley & Woodhouse, of Bradford and Bolton. The total cost, including spire, will be about 5,000*l*.

## SCHOOL BUILDINGS.

**Long Eaton.**—The memorial-stones of the new Congregational Sunday-school have been laid. The school is intended to accommodate 250, and is estimated to cost 320*l*. Mr. J. Brown, Long Eaton, is the builder, and Mr. J. Sheldon, Long Eaton, the architect.

**Dundee.**—A new public school is to be erected in the Rosebank district, and on Monday the building offers were conditionally accepted. It will accommodate 1,000 scholars, and the cost will be about 6*l* per scholar, as compared with 8*l*, the cost for schools previously erected. Mr. David Maclaren, Murraygate, Dundee, is the architect.

## GENERAL.

**M. Mallart** will exhibit at the Salon this year a picture having for subject the death of the last chief of the Gauls.

**The Aberdeen Art and Industrial Exhibition**, although visited by 54,816 people, has resulted in a slight deficit, the income having been 985*l*, and the expenditure 994*l*.

**The Duc d'Aumale** has presented the Hungarian National Gallery with an *Assumption* by Jerome Libri and a *Flight into Egypt* by Rembrandt, in exchange for an equestrian picture painted by Carle Vernet in 1782, and representing Philippe Egalité and his son, afterwards King Louis Philippe, in English hunting dress.

**Mr. Belt** has been commissioned to execute in marble a bust of the late Mr. Bass for the Liberal Club at Burton-on-Trent.

**Mr. W. J. Wood**, of Finsbury Pavement, has prepared plans for the restoration of the south aisle of Great Bursted Church, which are to be carried out as soon as approved of by the Church Building Societies.

**Mr. W. Coats** has resigned the district-surveyorship for East Kensington, and a successor will be elected on April 24.

**A Genealogical Manuscript Book**, which has been found in Berlin, contains no fewer than 150 miniatures in oil, painted for the most part on very thin plates of gold or silver, by artists whose names even have been quite forgotten—e.g. Lessnipp, Henr. Schmidt, Ed. Wittjequast, &c. Most of the miniatures are done with great delicacy, and are in excellent preservation. The book dates from the sixteenth century. It is intended to reproduce it in fac-simile, and to search for some information about the artists.

**A Reredos** has been placed in the Wilberforce Memorial Church, Southampton. It is 21 feet 6 inches long and 16 feet 6 inches high, has been executed by Messrs. Earp, Son & Hobbs, and has cost over 600*l*. It comprises five groups of sculpture, executed in high relief, in white alabaster, the same material in red, green, and dove-colour being used for the architectural surroundings.

**Lieut.-Colonel H. C. Seddon, R.E.**, has proceeded from the School of Military Engineering, Chatham, to Portsmouth, on appointment as superintending engineer at Her Majesty's dockyard at that port.

**The Severn Tunnel** is expected to be completed towards the end of the summer of this year.

**A New Church** at Addiewell, N.B., has been opened. It was erected from the designs of Mr. David Thomson, of Glasgow.

**An Examination** in architecture has been held in Manchester by the Manchester Society of Architects, acting with the Royal Institute of British Architects, when the following gentlemen were declared eligible for the associateship of the Royal Institute of British Architects:—Messrs. Benson, Paul Ogden, Norman Spencer, W. E. Willink, and Edgar Woods.

**Sir John Coode**, who was appointed referee in a dispute between Mr. Lawson, late contractor for the deepening of Peterhead south harbour, and the Harbour Trustees, has made his award. Mr. Lawson claimed 16,350*l*. including interest, and this sum Sir John Coode has reduced to 6,892*l*. The Harbour Trustees, however, have to pay the expenses, which are expected to amount to nearly 2,000*l*.

**A Tower and Spire** have been added to the parish church, Poynton, Cheshire, from the designs of Messrs. Medland and Henry Taylor.

**Lord Coleridge** has purchased the large building in Ottery St. Mary, which for nearly a century has been used as a silk factory.

**A Bridge** is to be constructed over the River Tarff, which is to be called the "Glentilt Bedford Memorial Bridge." It will be a memorial of a captain of St. Paul's School, who was drowned in 1879 when attempting to ford the river.

**The Board of Trade** have refused to grant a provisional order applied for by a Birmingham company, to supply Holywell and Greenfield with water to be abstracted from St. Winifred's Well. It was proposed to abstract 1,500,000 gallons of water, between Saturday and Sunday nights only.

**A Chapel** is proposed to be erected at Wednesfield at a cost of about 1,500*l*, the site for which has already been purchased.

**The late French Government** proposed to expend 879,000,000 frs. on public works, of which 713,000,000 frs. were for canals, 100,000,000 frs. for ports and harbours, and 66,000,000 frs. for rivers, and, in addition to this amount, there has been a supplementary grant of 100,000,000 frs. for the ports and 30,000,000 frs. for the canals. Havre is to have 100,000,000 frs. spent upon harbour works, and Bordeaux 20,000,000 frs.

**The Winter Gardens** erected by the South-Eastern Railway Company in connection with the Pavilion Hotel at Folkestone, were opened last week.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, APRIL 11, 1885.

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Correspondents are requested as much as possible to make their communications brief. The space we can devote to Correspondence will not usually permit our inserting lengthy communications.

## BURNTISLAND HARBOUR.

NEW sidings and an embankment wall have now been completed at Burntisland at a cost of 2,800l. The south hoist on east quay of dock and enlargement of return mains were provided by Messrs. Armstrong & Co. for 751l.; and the same firm substituted an iron framework on an extended scale at No. 1 hoist for the decayed wooden frame, raising the lift from 15 to 22 feet, at an expense of about 927l. Standpipes and tanks have been furnished for Nos. 1, 2, and 3 hoists for relieving the back pressure of the return mains, and expediting the lowering of the "lifts." A new and ornamental chimney of 100 feet in height is being raised at the engine-house at an estimated cost, with brick flues, of 200l. Repairs on the dock-heads are almost completed, at an expenditure amounting in the aggregate to 800l. The masonry has been thoroughly tied back with strong iron rods fixed to concrete blocks, which is expected to obviate the shifting and cracking of the walls in this exposed quarter. The work of replacing the old cofferdam by a substantial stone quay wall running parallel with it, but taking in other 25 feet of the tidal basin, is being carried out in successive contracts by Mr. Thomas Chalmers. This wall is founded on bearing-piles driven down through clay and mud, a foundation being thus secured at 34 feet from cope level. It is built with rubble concrete, faced with ashlar, and the remaining 600 feet is intended to be proceeded with until a junction is formed with the embankment at the head of the tidal harbour. The works have all been designed and superintended by Mr. R. Henderson, the resident engineer.

## PRUSSIAN METAL TRADES.

DURING 1883 the number of iron furnaces in blast was 194, against 192 in the previous year, while 45 were out of blast. The production averaged 13,278 tons per furnace, as against 12,589 in 1882. Copper showed a yield of 16,734 tons, as against 12,836, the majority of the production being furnished by the Mansfeld Company, which has extensive mines and smelting works, employing in the aggregate over 15,000 hands. As much as 68,463 kilo-

grammes of silver was produced by the same company. There was also a considerable increase in the yield of zinc, there being 116,644 tons of spelter, against 113,271 in the year before. Two-thirds of the amount came from Silesia, which contains 22 zinc smelting works.

## STEAM-DRYING OF TIMBER.

AN invention has been introduced into England by Mr. P. Parsons which is expected to expedite the process of drying timber. An apartment, or several connected compartments, are so constructed that they can be tightly closed and heated to the temperature required, the heating agency being exhaust or live steam. Where the former is used connection should also be made with the boiler, so that when the mill is closed at night, by opening a valve steam from the boiler may pass into the kiln's pipes, thereby preserving the temperature in the kilns over night. Uniform temperature as well as uniform action is essential. Sweating the timber is the first step in drying, and is done at the start by opening a valve in one of the pipes, governed from without, ejecting a spray of steam on to the timber while there is a little heat in the pipes. This facilitates the action of drying, and enhances the quality. The action is similar to that of immersing timber in water, or of floating logs. It dissolves the sap, which is of a glutinous or spongy nature, and the natural moisture at the centre escapes freely, and the wood comes together more compactly and firmer than if sap is suffered to dry down as in seasoning ordinarily.

An exhaust fan is now used to draw the heated, moisture-laden air from the room or kiln, and force it through a cylinder condenser back to the room. The condenser extracts from the air, thus drawn out, its moisture, which, liquefied, is discharged through a waste-pipe, while the air, now dry, passes back to the kiln, and being rapidly heated by the heat radiated from the steam pipes at the bottom, its capacity for moisture is thereby greatly increased, and the moisture is more freely extracted from the timber in its circulation through the apartment. The air when again charged with moisture from the sweating timber, is drawn out, and thus the circuit is continually made until the timber is thoroughly dry.

The relative humidity is changed so continuously and gradually by this action that the effect is said to be excellent. Warping and checking are prevented—a result well-nigh impossible heretofore. The timber is left natural, the surface is not hardened or baked, as in dessication. By this process, too, the timber, being kept in moisture of heat while it is being dried, is seasoned perfectly inside, without any of that "honeycomb" or "heart check" which often appears in thick stock dried in the ordinary dry-house. Sap, if allowed to dry down in timber, always remains a ready absorbent of moisture. Dissolve the sap at the first, and the timber will be much better in quality, and ever remain in position when worked.



The method is simple, and this has been the inventor's aim from the start, as well as to follow closely in the steps of nature. First, heating the material to a mean temperature of 125 degrees, and maintaining it, with none of the detrimental effects of sudden atmospheric changes. Secondly, circulation of air by means of the fan. Thirdly, condensation, or removal of the moisture.

### THE AMALGAMATED SOCIETY OF CARPENTERS AND JOINERS.

In his report for the year 1884 the general secretary of this Association (Mr. J. S. Murchie) states that during the year thirty-three new branches were opened—sixteen in England, two in Ireland, seven in the United States, five in Australia, one in Tasmania, and two in Southern Africa—and three were closed owing to depression in trade. There is now a total membership of 24,784—a gain during the year of 1,945. The net income for the year was 59,317*l.* 1*s.* 6*d.*, and the net expenditure 57,933*l.* 7*s.* 3½*d.*, leaving a cash balance of 57,253*l.* 2*s.* 8*d.*, or an increase of 1,383*l.* 14*s.* 2½*d.* The total funds, buildings, and other property, which have been carefully revalued, stand at 63,270*l.* 6*s.* 0½*d.*, or 2*l.* 11*s.* 0¾*d.* per member. In unemployed benefit the Society has expended 23,262*l.* 0*s.* 1*d.*, or 18*s.* 9½*d.* per member, as against 14*s.* 0¾*d.* per member in the previous year. This shows a decided falling off in trade, but compares very favourably with 1879, when the amount per member reached 1*l.* 12*s.* 9*d.* In sick benefit there has been expended 14,852*l.* 8*s.* 8½*d.*, or 11*s.* 11¾*d.* per member. Compensation for tools lost by fire, water, or theft cost 1,641*l.* 1*s.* 4½*d.*, or 1*s.* 3¾*d.* per member. Accident benefit cost 1,450*l.*, or 1*s.* 2*d.* per member. For the four years previous to the commencement of the Employers' Liability Act this benefit cost 6*s.* 5¾*d.* per member, and for the four years subsequent to the Act coming into operation it had cost 4*s.* 10½*d.* per member. "This," it is observed, "cannot help but

furnish a most substantial argument in favour of the Act, and to the necessity of its being renewed at its expiration." In superannuation benefit the Society has expended 2,003*l.* 10*s.* 2*d.*, or 1*s.* 7¾*d.* per member—an increase from 1*s.* 3¾*d.* in 1883. In trade privileges—an item which covers the whole of the expenses of trade movements, whether of a hostile or peaceful character—there has been expended 2,140*l.* 15*s.* 4½*d.*, or 1*s.* 8¾*d.* per member. Contingent and benevolent grants have amounted to 960*l.* 17*s.* 8*d.* This has been paid in extra relief to distressed members, or the widows and children of deceased members whose cases have been recommended to the Executive Council after investigation by the branches. In grants to other trades there has been expended 154*l.* 5*s.* 9½*d.*, and in funerals 2,499*l.* 10*s.* The total amount expended in the above benefits since June 1860—the date of the formation of the Society—is 500,799*l.*, or 43*l.* 0*s.* 9½*d.* per member.

### HEATING AND VENTILATION.

MR. E. H. SHORLAND, of St. Gabriel's Works, Manchester, is now supplying his patent Manchester grates and Manchester stoves to the new Board School, Stanwix; Infirmary, Bradford; Board Schools, Skipton; Industrial Schools, Witton Gilbert; new Seaman's Barracks, Devonport; Central Station, Liverpool; Central Station, Warrington; Sedburgh Grammar School Sanatorium; Cottage Hospital, Maidenhead; Manchester, Sheffield, and Lincolnshire Railways Co.'s new Offices, Manchester; National Provincial Bank of England, Manchester; Masham Grammar School; new Schools, Lincoln; new Schools, Wrexham; and numerous other public and private buildings.

Mr. Shorland has just received a letter from Messrs. Edgington & Summerbell, architects, of Windsor, saying that the vertical ventilating tubes supplied by him to the British Orphan Asylum, Slough, the Windsor Infirmary, and other places, are acting exceedingly well and giving every satisfaction.

### COMPETITIONS OPEN.

**BOOTLE.**—May 1.—Plans and Specifications are invited for the proposed Erection of Public Baths. Mr. J. Alexander, Borough Surveyor Bootle.

**WIMBLEDON.**—Plans are invited for proposed Free Library. Mr. W. H. Whitfield, 5 Southampton Street, Bloomsbury, W.C.

### CONTRACTS OPEN.

**ABERDEEN.**—April 13.—For Building Church at Rothiemurchis. Mr. D. M. Millan, Architect, 4 Dee Street, Aberdeen.

**ABERDEEN.**—April 14.—For Building Dwelling-house at Upper Tillydrine. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

**ABERDEEN.**—April 14.—For Station Building at Brickie, Nether Buckie, Portgordon and Pochabers, on Great North of Scotland Railway. W. Moffatt, Secretary.

**ABINGDON.**—For Building Corn Exchange. Mr. Charles Bell, Architect, Dashwood House, 9 New Broad Street, E.C.

**ARDEE.**—April 14.—For Cooking Range for 200 Persons. Mr. T. B. Drumgoole, Ardee Workhouse, Ireland.

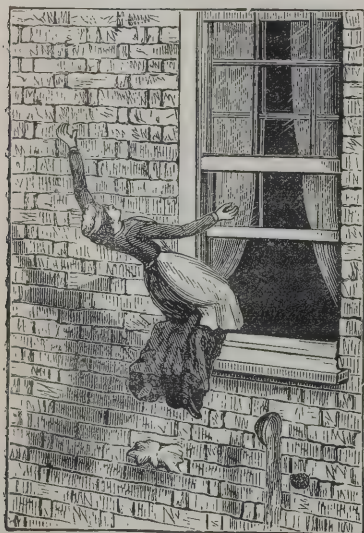
**ARMAGH.**—April 11.—For Fitting Laundry with Steam Engine, Boilers, Drying Closet, Hydro-extractor, Wringing Machine, &c. Mr. J. Boyd, Architect, 9 Donegall Square West, Belfast.

**ASCOT.**—April 13.—For Supplying and Laying Cast-iron Pipes (16 miles), with Branches and Irregulars. Mr. A. W. Rixon, Solicitor, 10 Austin Friars, E.C.

**ATHERSTONE.**—April 20.—For Alterations, Reseating, &c., Congregational Church. Messrs. Ingall & Hughes, Architects, Temple Row West Birmingham.

# R. ADAMS,

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These patent fittings can be procured from 5*s.* for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—

|  |  |
|--|--|
| Tarnstaple   | Hancock, Pilton Street.                    |
| Belfast and 10 miles round   | W. J. Watson, Royal Avenue, Belfast.       |
| Bournemouth and 10 miles round   | H. W. Jenkins & Son, Builders.             |
| Brighton and 8 miles round   | Cheesman & Co., Kensington Street.         |
| Bristol and 20 miles round, and Gloucestershire, Somerset, Dorset, Wilts, Mon., Glamorganshire | Brock & Bruce, Albert Road, St. Phillip's. |
| Dublin and 20 miles round  | J. & W. Beckett, 28 South King Street.     |
| Dundee and 30 miles round  | Stewart Robertson, 34 Bank Street.         |
| Edinburgh  |  |
| Exeter and 20 miles round  | W. R. Commings, 45 Longbrook Street.       |
| Glasgow and 30 miles round   | Baird, Thompson & Co., 24 Bath Street.     |
| Gloucester and Cheltenham  | The Sanitary and Economic Association.     |

|                                  |  |
|----------------------------------|--|
| Hastings                         | 1 Bay of Bios, Dulcres.                                      |
| Hereford and 5 miles round       | C. Lawrence, 41 Portland Street.                             |
| Hilcomb                          | W. Jones, 4 Osborne Road.                                    |
| Leeds and 5 miles round          | John Wm. Lewes, 65 Albion Street.                            |
| Liverpool                        | Evan Griffiths & George Finning, Sefton Works, Mills Street. |
| Ludlow and Leominster            | J. Grosvenor, Ludlow.  |
| Newton Abbott and 10 miles round | Parker Bros., Courtney Street.                               |
| Nottingham and 15 miles round    | Henry Vickers, Welford Road.                                 |
| Reading and 5 miles round        |  |
| Southampton and 7 miles round    | Driver & Co., St. Mary Saw Mills, Southampton.               |
| Sunderland and 10 miles round    |  |
| Torquay and 5 miles round        | C. & W. Wat on, Union Street.                                |





ATHERSTONE.—April 11.—For Construction of Waterworks (Engine and Boiler-houses, Chimney Shaft, &c., Reservoir) and Supply of Iron Pipes, Engines, Boilers, &c. Mr. Baldwin Latham, C.E., 7 Westminster Chambers, S.W.

AVONMOUTH.—April 16.—For Construction of Temporary Hospital. Mr. F. Ashmead, C.E., Surveyor, 13 Prince Street, Bristol.

BALDON.—April 14.—For Building Schools. Mr. C. S. Nelson, Architect, Albert Chambers, Park Row, Leeds.

BATLEY.—April 23.—For Enlargement of Blenheim House. Mr. W. Hanstock, Architect, Branch Road, Batley.

BELFAST.—April 13.—For Building School-house. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

BELFAST.—April 25.—For Building Shops and Dwelling-houses. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

BERMONDSEY.—April 16.—For Additional Water-closets, Lavatories, Bathrooms, and Relief Offices at the Workhouse, Tanner Street. Messrs. H. Saxon Snell & Son, Architects, 22 Southampton Buildings, Chancery Lane.

BICTON.—April 13.—For Building Church. Mr. A. E. Lloyd Oswell, Architect, Dana Chambers, Shrewsbury.

BIRKENHEAD.—April 15.—For Pulling-down and Rebuilding Brick and Stone Boundary Walling (340 yards) at Workhouse, Tranmere. Mr. Thos. C. Thorburn, C.E., Borough Surveyor, 35 Hamilton Square, Birkenhead.

BIRMINGHAM.—April 20.—For Laying Wood Paving (5,000 to 6,000 square yards) in Corporation Street. Mr. Wm. Till, Borough Surveyor, Council House, Birmingham.

BOGTHORN.—April 18.—For Rebuilding Two Dwelling-houses. Mr. John Judson, Architect, Bogthorn, near Keighley.

BOSTON.—April 12.—For Excavation of New Cut and Sea Sluice. Mr. R. W. Staniland, Clerk of Sewers, Boston, Lincolnshire.

BOURNEMOUTH.—April 14.—For Building on Pierhead 250 feet run of Shelters, &c., Wind Screens of Wrought-iron Girders, Plate-glass, Zinc Roofing and Woodwork, &c. Mr. R. W. Peregrine Birch, C.E., 2 Westminster Chambers, Victoria Street, S.W.

BRISTOL.—April 16.—For Building Fence and Boundary Walls, Providing Iron Railing, &c., at Pleasure Ground, Mina Road. Mr. F. Ashmead, C.E., Surveyor, 13 Prince Street, Bristol.

BUTTERKNOWLE.—April 16.—For Building Chapel at Copley. Mr. H. T. Neilson, 7 Horse Market, Darlington.

CAMBERWELL.—April 15.—For Building Mortuary. The Surveyor, Vestry Hall, Peckham Road, Camberwell.

CARDIFF.—April 16.—For Building Thirty-four Shops with Cellars, Offices, &c. Mr. J. P. Jones, Architect, 27 Park Street, Cardiff.

CARLISLE.—April 21.—For Building Boundary Wall, Entrance Gateway, &c., Roadway Bridge, and Abutments for Footbridges, Diversion of Fairy Beck, &c. Mr. Isaac Cartmell, Clerk to the Burial Board, Town Hall, Carlisle.

CHATHAM.—April 16.—For Alterations and Additions to Fire-engine Station, Military Road. The Surveyor, Local Board Offices, Chatham.

CHELSEFIELD.—April 16.—For Building Schools, with Master's Residence, &c. Mr. G. St. Pierre Harris, Architect, 1 Basinghall Street, E.C.

CHESTHILL.—April 20.—For Additions and Alterations to Invervar Lodge and Steading. Mr. John Hamilton, Chesthill, Fortingal, N.B.

CLAYTON.—April 17.—For Building Four Houses. Mr. J. Drake, Architect, Winterbank, Queensbury.

CLEATOR MOOR.—April 11.—For Building Hotel, Seven-stall Stable, and Coach-house. Names, &c., to be sent to Messrs. Pickering & Crompton, Architects, 11 Lowther Street, Whitehaven.

COCKERMOUTH.—April 16.—For Building Printing and Publishing Offices for *West Cumberland Times*. Mr. R. S. Marsh, Surveyor, Cockermouth.

DERBY.—April 24.—For Extensive Additions and Alterations to the Railway Servants' Orphanage Buildings, Ashbourne Road. Mr. Thomas Hall, Secretary, Railway Servants' Orphanage, Ashbourne Road, Derby.

DUKINFIELD.—April 15.—For Building Stores, Lecture-hall, &c. Messrs. J. Eaton & Sons, Architects, Ashton-under-Lyne.

EASTINGTON.—April 22.—For Works at Parish Church. Messrs. Waller, Son & Wood, Architects, 17 College Green, Gloucester.

FENTON.—April 28.—For Supply of 36-inch Station Governor, with Inlet, Outlet, Valves, and Connections. Mr. James Stelfox, Engineer, Gasworks, Manager, Belfast.

FERNDALE.—April 16.—For Building Billiard-room and Alterations to Commercial Hotel. Mr. J. Williams, Architect, 3 and 4 Edward Street, Morgantown, Merthyr.

GALWAY.—April 15.—For Building Constabulary Barrack. Mr. W. B. Soady, Office of Public Works, Dublin.

GALWAY.—April 15.—For Building Post Office. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

GLASBURY.—For Building Vicarage. Mr. E. H. Lingen Barker, Architect, 6 King Street, Hereford.

GREENOCK.—April 27.—For Supply of Two Sample Hydraulic Travelling Cranes (3 tons and 1½ ton), &c. Mr. W. R. Kinipple, C.E., 17 West Blackhall Street, Greenock.

GORLESTON.—For Building Two Dwelling-houses. Mr. G. Baker, Architect, Queen's Road, Yarmouth.

HALIFAX.—May 1.—For Building Eight Dwelling-houses. Messrs. Geo. Buckley & Son, Architects, Waterhouse Street, Halifax.

HASLINGDEN.—April 20.—For Formation of Circular Reservoir. Mr. T. Woodcock, Clerk to the Guardians, West View, Haslingden.

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**HUDDERSFIELD.**—April 15.—For Alterations at County Court. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

**HUDDERSFIELD.**—April 16.—For Rebuilding Warehouse. Messrs. John Kirk & Sons, Architects, Huddersfield.

**HULL.**—April 16.—For Water Main Piping (2,000 tons). Mr. D. Maxwell, C.E., Town Hall, Hull.

**IPSWICH.**—April 21.—For Building Shops and Offices. Mr. Wm. Eade, Architect, Post-office Chambers, Ipswich.

**JARROW.**—April 25.—For Building Board School. Mr. J. H. Morton, Architect, South Shields.

**KNARESBOROUGH.**—April 13.—For Taking Down Three Houses and Building New House. Mr. W. Clemishaw, Finkle Street, Knareborough.

**KNIGHTON.**—April 16.—For Building Pair of Houses, Bridge Street. Mr. W. R. Edwards, Skyberry, Knighton, Radnorshire.

**LANCASTER.**—April 22.—For Additional Farm Buildings at the Royal Albert Asylum. Mr. James Diggens, Secretary, Royal Albert Asylum, Lancaster.

**LERWICK.**—April 11.—For Building Combination Poor-house. Names to be sent to Mr. Wm. Calderhead, Secretary, Parochial Board Office, Lerwick, Shetland.

**LONDON.**—For Building Small Suburban Houses. Messrs. E. S. & H. Boosey, Architects, 3 Langham Place, Regent Street, W.

**LONGTON.**—For Building Church. Mr. J. E. K. Cutts, Architect, 28 Southampton Street, Strand, W.C.

**LUGWARDINE.**—April 25.—For Building Vicarage. Mr. T. Nicholson, Architect, Hereford.

**MALAHIDE.**—April 22.—For Building Coast-guard Station. Mr. W. B. Soady, Office of Public Works, Dublin.

**MONMOUTH.**—April 14.—For Building Passenger Station, Rogiet Junction. The Engineer, Paddington Station.

**MOTTRAM.**—April 13.—For Supplying and Fixing Choir Stalls to Chancel of Church. Messrs. Weaver & Adye, Architects, Town Hall Chambers, Bradford-on-Avon.

**MUCHALLS.**—April 11.—For Building Villa. Mr. John Rust, jun., Architect, 4 Bridge Street, Aberdeen.

**NEWPORT.**—April 29.—For Construction and Erection of Six Purifiers (20 feet square), with Centre and other Valves, and Travelling Lifts, for Gasworks, Crindau. The Engineer, Gas Offices, Mill Street, Newport, Mon.

**NORWICH.**—April 15.—For Building Bullock Lodge, Turnip-house, &c., on Farm, Halvergate. Mr. Arthur J. Lacey, Architect, Orford Hill, Norwich.

**PETERBOROUGH.**—For Building Small Villa. The Prince's Street Engineering Works, Peterborough.

**POPLAR.**—April 11.—For Building Dwelling-houses for Pier-master and Crew. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**RATHMINES.**—April 14.—For Enlargement of Parish Church. Mr. A. Jones, Architect, 43 Stephen's Green, Dublin.

**RESOLVEN.**—April 27.—For Construction of Reservoir and Laying Water Mains. Mr. W. E. Thomas, Surveyor, 58 Water Street, Neath.

**ROTHERHAM.**—April 13.—For Erection of Public Baths and Free Library. Mr. H. L. Tacon, 11 Westgate, Rotherham.

**SHEFFIELD.**—For Building Drill Shed, Armoury, &c. Mr. W. H. Lancashire, Architect, 6 George Street, Sheffield.

**SILVERTOWN.**—April 20.—For Building Detached Private Dwelling-house. Mr. J. O. Cook, Architect, 24 William Street, Woolwich.

**SOMERSHAM.**—April 23.—For Building Organ Chamber to Parish Church. Rev. A. Kirke Smith, Somersham, Hunts.

**SOUTHPORT.**—April 16.—For Erection of School for 489 Children in Swire and Bury Roads, Birkdale. Mr. C. A. Atkinson, Architect, 35A Castle Street, Liverpool. Mr. H. S. Threlfall, Clerk to the School Board.

**SOUTH MILTON.**—April 11.—For Restoration of Church at South Milton. Archdeacon Earle, West Alvington, Kingsbridge.

**SOWERBY BRIDGE.**—April 14.—For Building Fireproof Mill, and for Cast-iron Work or Rolled Iron Beams for same. Messrs. Stott & Sons, Architects, 12 Clegg Street, Oldham.

**SPARKBRIDGE.**—April 14.—For Building Bobbin Mill. Mr. J. Y. McIntosh, Architect, Barrow-in-Furness.

**SWANSEA.**—April 21.—For Alterations and Additions to Morrision Board School. Mr. E. Sidney Hartland, 5 Rutland Street, Swansea.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**TEAM COLLIERY.**—April 16.—For Building Chapel and School. Mr. William Thompson, Architect, 4 Western Terrace, Chester-le-Street.

**WELLINGTON.**—April 11.—For Laying Cast-iron Pipes, Erection of Pumping Station, Water Tower, with Adit and Well. Mr. E. Pritchard, C.E., 2 Storey's Gate, Westminster.

**WHICKHAM.**—April 21.—For Billiard-room, Smoke-room, &c., Dunstan Hall. Mr. F. R. Wilson, Architect, Alnwick.

**WILLESDEN.**—April 14.—For Two Horizontal Condensing Engines, Boilers, Pumps, &c. Mr. O. C. Robson, Hampton House, High Road, Kilburn.

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**EXAMINATION UNDER THE METROPOLITAN BUILDING ACT (13 & 19 Vict. cap. 122, sec. xxxiii.), and under other Acts of Parliament, &c.**—The Board of Examiners appointed by the Royal Institute of British Architects to examine all persons presenting themselves for that purpose as to their competency to perform the duties of DISTRICT SURVEYOR in London, and of BUILDING SURVEYOR under local authorities, and to grant Certificates to Candidates deservng of the same, will hold an Examination on the 23rd and 24th instant. Each Candidate must on or before Friday, the 17th instant, send to the undersigned an Application drawn upon a form to be previously obtained from them; and each Candidate will be required to attend at the Royal Institute of British Architects on Thursday, the 23rd instant, from 10 A.M. until 1 P.M., and from 2 P.M. until 5 P.M., for the WRITTEN AND GRAPHIC Examination; and on Friday, the 24th instant, at 12 noon, for the ORAL Examination. Each Candidate on sending in his formal Statement and Application must pay to the Royal Institute of British Architects a fee of TWO GUINEAS; and each Candidate on receiving his Certificate, should the same be granted to him, must pay to the Institute a further sum of THREE GUINEAS. The Questions, written and graphic, set at these Examinations are not published.

J. MACVICAR ANDERSON, Hon. Secretary.  
WILLIAM H. WHITE, Secretary.  
Royal Institute of British Architects, 9 Conduit Street,  
Hanover Square, London, W:  
April 2, 1885.

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"June 10, 1884."

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it."

Yours, &c.

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"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square."

"February 15, 1884."

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,

July 1884.

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"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

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"Mr. John Grundy."

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|  |      |     |
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| For Works to Road and Footpaths leading from Main Road to top of Lorne Terrace, Twerton, Bath. |      |     |
| Ashman   | £230 | 0 0 |
| Welsh  | 196  | 7 0 |
| Weeks  | 162  | 0 0 |
| AMBROSE & SON (accepted)   | 139  | 0 0 |

**BEDFORD.**

|   |      |      |
|---|------|------|
| For Erection of Dwelling-house, Bakehouse, &c., for Mr. Mortimer, Spring Road, Bedford. Mr. F. T. MERCER, Architect. Quantities supplied. |      |      |
| LONG (accepted)   | £695 | 10 0 |

**BOGNOR.**

|   |        |     |
|---|--------|-----|
| For Construction of Roads (2,000 yards). Mr. W. L. BARRETT, C.E., Surveyor, High Street, Bognor.              |        |     |
| Hobbs   | £4,630 | 0 0 |
| Catty   | 4,400  | 0 0 |
| Adams   | 4,289  | 0 0 |
| Chamberlain   | 4,107  | 0 0 |
| Searle  | 4,093  | 0 0 |
| Hotham  | 4,085  | 0 0 |
| Marshall  | 3,995  | 0 0 |
| Bottom Bros.  | 3,937  | 0 0 |
| Etheridge   | 3,839  | 0 0 |
| Rigby   | 3,832  | 0 0 |
| Cook & Smith  | 3,800  | 0 0 |
| Smith   | 3,750  | 0 0 |
| Cook & Co.  | 3,741  | 0 0 |
| Harrison  | 3,578  | 0 0 |
| Killingback   | 3,543  | 0 0 |
| Nicholson   | 3,496  | 0 0 |
| Butt  | 3,438  | 0 0 |
| Williams, Wimbledon   | 3,350  | 0 0 |
| Trueman, Hackney  | 3,295  | 0 0 |
| NEWMAN, Deptford, S.E. (accepted)   | 3,290  | 0 0 |
| For Relaying 15-inch Pipe Sewer of 1,560 feet, for the Bognor Local Board. Mr. W. L. BARRETT, C.E., Surveyor. |        |     |
| Newman, Deptford  | £265   | 0 0 |
| Tate, Bognor  | 250    | 0 0 |
| No tender accepted.   |        |     |

**BOLTON ABBEY.**

|   |  |  |
|---|--|--|
| For Memorial Fountain to the late Lord Frederick Cavendish, to be Erected at Bolton Abbey. Messrs. T. WORTHINGTON & J. G. ELGOOD, Architects, Manchester. |  |  |
| <i>Accepted Tenders.</i>  |  |  |
| Stephenson & Co., Manchester, mason, &c.  |  |  |
| Earp, Son & Hobbs, London and Manchester, carving.  |  |  |

**BRIDGEND.**

|   |      |      |
|---|------|------|
| For Building Dwelling-house, Gelli-vedi Farm, near Pencoed, Bridgend, for Col. T. Pictou, Turbervill. Mr. GEORGE R. LAMBERT, Architect, Bridgend. |      |      |
| Rees, Pencoed   | £415 | 0 0  |
| Morgan, Llantwit  | 375  | 0 0  |
| Richards, Bridgend  | 372  | 10 0 |
| PREECE, Bridgend (accepted)   | 367  | 5 0  |
| Treharne, Pencoed   | 340  | 0 0  |
| Robert, Bridgend  | 325  | 0 0  |

**BUCKIE.**

|  |      |      |
|--|------|------|
| For Building Shop and Block of Dwelling-houses, Marine Place, Cluny Harbour, Buckie. Mr. JAMES PERRY, Architect. |      |      |
| <i>Accepted Tenders.</i>   |      |      |
| Milne, Buckie, mason   | £349 | 0 0  |
| M'Beth, Buckie, carpenter  | 257  | 0 0  |
| Hume & Co., Buckie, plasterer  | 67   | 0 0  |
| Barclay, Buckie, slater  | 41   | 10 6 |
| Gordon, jun., Elgin, plumber   | 28   | 17 6 |
| Symon, Buckie, painter and glazier   | 24   | 10 0 |

**DARLINGTON.**

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|---|--------|------|
| For Construction of Engine and Boiler-houses and other Works at Broken Scar, Darlington. Mr. JAMES MANSEGH, C.E., Engineer. Quantities by the Engineer. |        |      |
| S. & W. Pattinson   | £6,668 | 16 4 |
| Walker & Dickinson  | 6,109  | 10 3 |
| Allison   | 5,939  | 3 1  |
| Marshall  | 5,910  | 9 10 |
| Craggs & Benson   | 5,842  | 7 7  |
| W. & R. Blackett  | 5,793  | 4 5  |
| Ridley  | 5,762  | 4 7  |
| Atkinson  | 5,624  | 3 0  |
| Howe  | 4,691  | 10 9 |

**CUSHENDALL.**

|   |      |     |
|---|------|-----|
| For the Reseating and Enlargement of the Parish Church of Cushendall. |      |     |
| Campbell & Lowry, Belfast   | £505 | 0 0 |
| Lavery & Sons, Carrickfergus  | 476  | 0 0 |
| <i>For different Specifications.</i>                                  |      |     |
| Loughlin & Harver, Belfast  | 490  | 0 0 |
| Adair, Ballymena  | 398  | 0 0 |

**EAST GRINSTEAD.**

|   |      |      |
|---|------|------|
| For Erection of Schoolroom, North End, East Grinstead. Mr. S. W. HAUGHTON, S.A., Architect, East Grinstead.   |      |      |
| Head & Wallis, Lingfield  | £351 | 0 0  |
| Webber, Crawley Down  | 315  | 0 0  |
| Beard, East Grinstead   | 307  | 10 0 |
| Morris, Ashurst Wood  | 250  | 0 0  |
| Charlwood Bros., East Grinstead   | 230  | 0 0  |
| Foster, East Grinstead  | 221  | 0 0  |
| PLEDGE, East Grinstead (accepted)   | 177  | 0 0  |
| For Erection of a Classroom, adjoining the Infant School, for the East Grinstead School Board. Mr. S. W. HAUGHTON, S.A., Architect, East Grinstead. |      |      |
| Charlwood Bros., East Grinstead   | £330 | 0 0  |
| Pledge, East Grinstead  | 297  | 0 0  |
| Taylor, Forest Row  | 265  | 10 0 |
| Morris, Ashurst Wood  | 265  | 0 0  |
| QUICKENDEN, East Grinstead (accepted)   | 250  | 0 0  |

**EDENBRIDGE.**

|  |      |      |
|--|------|------|
| For Alterations and Repairs to Edenbanks, Edenbridge. Mr. S. W. HAUGHTON, S.A., East Grinstead, Architect. |      |      |
| Charlwood Bros., East Grinstead  | £248 | 0 0  |
| Beale & Son, Tunbridge Wells   | 235  | 0 0  |
| Tooth, East Grinstead  | 235  | 0 0  |
| Dives, Lingfield   | 230  | 15 0 |
| Smith, Tonbridge   | 223  | 0 0  |
| Jarvis, Tunbridge Wells  | 215  | 0 0  |
| GOODWIN BROS., Edenbridge (accepted)   | 180  | 0 0  |

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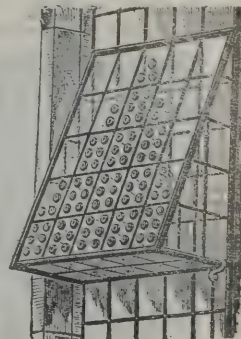
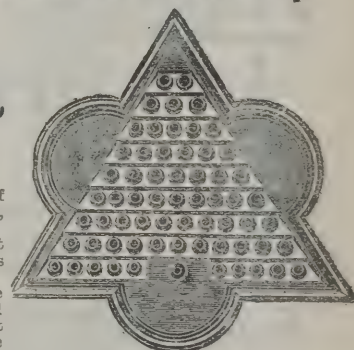
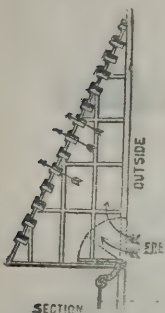
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| For Construction of Sewers, Manholes, &c., Fenton. Mr. S. A. GOODALL, Surveyor. |             |
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| Cowdery & Son, Newent   | 2,400 0 0   |
| Wood, Newcastle-under-Lyme  | 2,297 8 2   |
| Hughes, Lower Gornal  | 2,292 6 4   |
| J. Smith, Stoke-on-Trent  | 2,246 15 3  |
| S. Smith, Stoke-on-Trent  | 2,198 13 9  |
| Mackay, Stoke-on-Trent  | 2,127 0 0   |
| DREWITT, Alsager (accepted)   | 2,102 19 11 |
| Surveyor's estimate   | 2,246 14 4  |

**GOOLE.**

|  |            |
|--|------------|
| For Building Residence, Boothferry Road, Goole. Mr. H. B. THORP, Architect, Goole. |            |
| JACKSON BROS. (accepted)   | £1,150 0 0 |
| Twenty-one Tenders were received.  |            |

|  |          |
|--|----------|
| For Building Warehouse, Goole. Mr. C. B. TUDOR, Architect. |          |
| JACKSON BROS. (accepted)                                   | £200 0 0 |

**GUILDFORD.**

|   |            |
|---|------------|
| For Constructing Reservoir at the Telegraph Field, Guildford. |            |
| Currington & Peto, Guildford                                  | £2,190 0 0 |
| Bottrill, London  | 2,160 0 0  |
| Cane, New Barnet  | 2,022 0 0  |
| Lamb, Chertsey  | 1,705 0 0  |
| Ridley & Co., Guildford                                       | 1,649 0 0  |
| Hater & Co., Portsmouth                                       | 1,638 0 0  |
| Chamberlain, Arundel  | 1,609 0 0  |
| Bottrill, Reading   | 1,583 0 0  |
| Beagle Bros., Kent  | 1,559 0 0  |
| Mackay, Woking  | 1,516 0 0  |
| Potter, Lower Clapton   | 1,510 0 0  |
| Garnett, Guildford  | 1,495 0 0  |
| Cowdery & Son, Gloucester                                     | 1,455 0 0  |
| Smith, Dorking  | 1,449 0 0  |
| Knight, Kent  | 1,430 0 0  |
| Kirk Bros., Addlestone  | 1,415 0 0  |
| Trimm, Horsham  | 1,368 0 0  |
| Rowland, Horsham  | 1,295 0 0  |
| Peters, Horsham   | 1,289 0 0  |
| Cooke & Co., Battersea  | 1,248 0 0  |
| HALL, Portsmouth (accepted)                                   | 1,138 0 0  |
| Etheridge Bros.   | 1,126 0 0  |

**HEREFORD.**

|  |  |
|--|--|
| For Rebuilding Drapery Establishment for Messrs. Barrett & Greenland, High Street, Hereford. Mr. W. ROBINSON, Architect, 21 High Street, Hereford. |  |
| CULLIS, Victoria Street, Hereford (accepted).  |  |

**JARROW.**

|  |           |
|--|-----------|
| For Street Works, Jarrow. Mr. J. PETREE, Borough Surveyor. |           |
| Callaghan  | £462 19 0 |
| Maughan  | 422 4 5   |
| ADAMS (accepted)   | 394 13 11 |
| Surveyor's estimate  | 356 13 4  |

**KIDDERMINSTER.**

|  |             |
|--|-------------|
| For Supply of 340 tons or thereabouts of Cast-iron Water-pipes, Kidderminster. |             |
| Oakes & Co., London  | £1,638 15 0 |
| Newton, Chambers & Co., Sheffield  | 1,604 0 0   |
| Clay Cross Company   | 1,484 0 0   |
| Cochrane & Co., Dudley   | 1,440 0 0   |
| J. & S. Roberts, West Bromwich   | 1,361 0 0   |
| FIRMSTONE BROS., Stourbridge (accepted)  | 1,345 9 0   |

|  |  |
|--|--|
| For Construction of Covered Service Reservoir, and Laying and Jointing of 2,700 yards of Cast-iron Pipes, Kidderminster. |  |
|--|--|

|                               |            |
|-------------------------------|------------|
| Vale, Kidderminster           | £8,383 0 0 |
| Hughes, Lower Gornall         | 7,690 0 0  |
| Thompson, Kidderminster       | 7,559 10 0 |
| Law, Kidderminster (accepted) | 5,977 0 0  |
| Frayne, Stourport             | 5,441 10 4 |

**Sewers and Flushing Tanks.**

|                               |           |
|-------------------------------|-----------|
| Williams, Swansea             | 9,163 0 0 |
| Hughes, Lower Gornall         | 6,778 0 0 |
| LAW, Kidderminster (accepted) | 5,897 0 0 |

**KINGSTON-UPON-THAMES.**

|   |          |
|---|----------|
| For Repairs and Alterations to the Chapel and Entrance Lodge at the Cemetery, Kingston-upon-Thames. |          |
| Loveland, Kingston  | £461 0 0 |
| Oldridge & Sons, Kingston   | 299 0 0  |
| WHEELER, Kingston (accepted)  | 290 18 0 |
| Ventham & Gaze, Kingston  | 285 15 0 |

**LEEDS.**

|  |  |
|--|--|
| For Alteration of Premises in Albion Street, Leeds (lately occupied by the National Provincial Banking Company), for Messrs. Ford & Warren, Solicitors. Mr. THOMAS WINN, Architect, 18 Park Lane, Leeds. |  |
| Quantities by the Architect.   |  |

**Excavators, Bricklayers, Masons, Joiners and Carpenters' Work.**

|                             |           |
|-----------------------------|-----------|
| Thorp                       | £598 15 0 |
| Franks & Evans              | 585 18 0  |
| Nicholson & Son             | 584 0 0   |
| IRWIN & Co. (accepted)      | 550 0 0   |
| Plumber and Glaziers' Work. |           |
| Thompson Bros.              | 95 0 0    |
| LINDLEY (accepted)          | 91 0 0    |

**Plasterers' Work.**

|                                  |         |
|----------------------------------|---------|
| FRANKS & EVANS (accepted)        | 49 10 6 |
| Alteration of Heating Apparatus. |         |
| NELSON & SON (accepted)          | 17 10 0 |

**LIVERPOOL.**

|   |           |
|---|-----------|
| For Construction of Two Back Roads and Passage, between Olive Road and South View, Waterloo. Mr. R. THOMPSON, Surveyor. |           |
| McCabe & Co., Liverpool   | £266 11 3 |
| Walkden & Co., Liverpool  | 261 4 10  |
| Catterall & Co., Liverpool  | 254 18 4  |
| Fawkes Brothers, Southport  | 251 19 0  |
| Chadwick, Liverpool   | 246 11 10 |
| Keating & Son, Liverpool  | 231 9 6   |
| ARMSTRONG, Bootle (accepted)  | 230 19 0  |
| Surveyor's estimate   | 229 10 0  |

**LEWES.**

|   |          |
|---|----------|
| For Weather Tiling and Reflushing the West Side of the District Hospital and Convalescent Ward, Lewes. Mr. A. HOLT, Borough Surveyor. |          |
| Executors of J. Knight  | £32 0 0  |
| B. & J. B. Thorpe   | 29 15 0  |
| FLOYD (accepted)  | 21 0 0   |
| For Building Carman's Cottage at the Corporation Wharf, Lewes. Mr. A. HOLT, Borough Surveyor.   |          |
| B. & J. B. Thorpe   | £158 0 0 |
| Executors of J. Knight  | 152 10 0 |
| Berry & Bussey  | 130 0 0  |
| FLOYD (accepted)  | 118 0 0  |

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**LEWES—continued.**

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|                        |      |   |   |
|------------------------|------|---|---|
| Executors of J. Knight | £200 | 0 | 0 |
| B. & J. B. Thorpe      | 198  | 0 | 0 |
| Floyd                  | 181  | 0 | 0 |

**LINCOLN.**

For Building Baptist Chapel, Lecture Hall, and Schoolroom, St. Benedict's Square, Lincoln.

|                          |        |    |   |
|--------------------------|--------|----|---|
| Martin & Sims            | £3,380 | 0  | 0 |
| J. & T. Binns            | 3,293  | 0  | 0 |
| Walter & Hensman         | 3,068  | 0  | 0 |
| J. M. Harrison           | 2,982  | 0  | 0 |
| Richardson               | 2,944  | 17 | 3 |
| Close                    | 2,929  | 0  | 0 |
| Baines                   | 2,885  | 0  | 0 |
| Knight                   | 2,880  | 8  | 0 |
| Young                    | 2,823  | 0  | 0 |
| Greenwood                | 2,800  | 0  | 0 |
| Harrison & Sands         | 2,698  | 0  | 0 |
| Horton                   | 2,510  | 19 | 0 |
| Otter & Broughton        | 2,510  | 0  | 0 |
| J. B. Harrison           | 2,509  | 10 | 0 |
| Story & Son              | 2,490  | 0  | 0 |
| CROSBY & SONS (accepted) | 2,329  | 0  | 0 |

*Additional if in Pitch Pine.*

|                   |     |   |   |
|-------------------|-----|---|---|
| Walter & Hensman  | 165 | 0 | 0 |
| J. & T. Binns     | 100 | 0 | 0 |
| Martin & Sims     | 75  | 0 | 0 |
| J. M. Harrison    | 75  | 0 | 0 |
| Richardson        | 75  | 0 | 0 |
| Harrison & Sands  | 75  | 0 | 0 |
| Young             | 70  | 0 | 0 |
| Greenwood         | 70  | 0 | 0 |
| Clcse             | 50  | 0 | 0 |
| Crosby & Sons     | 50  | 0 | 0 |
| Story & Son       | 45  | 0 | 0 |
| Otter & Broughton | 35  | 0 | 0 |
| Baines            | 29  | 0 | 0 |
| Knight            | 29  | 0 | 0 |

**LONDON.**

For Supplying Steam Lifts to Factory at Vauxhall, for Messrs. Barrett & Co. (Limited). Mr. E. RAWLINGS, Architect, 3 Victoria Street, Westminster.

WAYGOOD & Co. (accepted) . £735 0 0

**LONDON—continued.**

For Supply of a Boiler, for the St. Margaret's and St. John's Bath Commissioners, Westminster.

|                               |      |   |   |
|-------------------------------|------|---|---|
| Horton & Son, Southwark       | £749 | 0 | 0 |
| Fraser & Co., Commercial Road | 610  | 0 | 0 |
| May, Holborn                  | 499  | 0 | 0 |

FRASER & FRASER, Bromley-by-Bow (accepted) . 489 0 0

For Construction of 26 lineal feet of Brick Sewer, including a Bell-mouth Junction, and 245 lineal feet of 12-inch Pipe Sewer, &c., Tite Street, Chelsea. Mr. G. R. STRACHAN, Surveyor.

|                             |      |   |   |
|-----------------------------|------|---|---|
| Trehearne & Co., Battersea  | £275 | 0 | 0 |
| Cooke & Co., Battersea      | 198  | 0 | 0 |
| Torkington, Chelsea         | 190  | 0 | 0 |
| SAUNDERS, Fulham (accepted) | 163  | 8 | 9 |

For Road Works, Battersea.

**Hauberk Road.**

|                     |      |   |   |
|---------------------|------|---|---|
| Cooke & Co.         | £137 | 0 | 0 |
| J. & T. Saunders    | 130  | 0 | 0 |
| Turner & Son        | 128  | 0 | 0 |
| Trehearne           | 141  | 0 | 0 |
| Surveyor's estimate | 148  | 0 | 0 |

**Limburg Road.**

|                     |     |   |   |
|---------------------|-----|---|---|
| Cooke & Co.         | 431 | 0 | 0 |
| J. & T. Saunders    | 421 | 0 | 0 |
| Turner & Son        | 494 | 0 | 0 |
| Trehearne           | 435 | 0 | 0 |
| Surveyor's estimate | 465 | 0 | 0 |

For New Aisle, Chancel, and other Additions to Rosslyn Hill Chapel, Hampstead, N.W. Messrs. T. WORTHINGTON & J. G. ELGOOD, Architects, Manchester. Quantities by Messrs. J. H. Strudwick & Son, London.

Hall, Beddall & Co.

Perry & Co.

Fish, Prestige & Co.

Philps & Bisiker.

ADAMSON & SONS (accepted).

Warming and Ventilation.

Haden & Son, Trowbridge.

For Heating Aldcliffe Hall, Lancaster. J. L. BACON & Co., London (accepted).

**LONDON—continued.**

For Taking Down and Rebuilding Nos. 13, 15, and 17 Gray's Inn Road, and two Shops and Dwellings, exclusive of Shop Fronts and Fittings. Mr. R. W. CRAWLEY, Architect, 12 Trinity Square, Tower Hill.

SPAIGHT & Co. (accepted) . £955 0 0

For Alteration and New Warehouse at 158 Old Kent Road, for Mr. A. Bennett. Mr. W. BARNES, Architect, 26 Choumert Grove, Peckham.

|         |      |    |   |
|---------|------|----|---|
| Hilling | £179 | 17 | 0 |
| Nere    | 148  | 16 | 0 |

HARDIMAN & WATTS (accepted). 128 0 0

For Heating Lismachar House, Belfast. J. L. BACON & Co., London (accepted).

**LONG EATON.**

For Building a Four-storey Factory, containing 120 Standings, with Engine and Boiler-houses, Out Offices, Boundary Walls, &c., for the Harrington Mills Company, Long Eaton. Mr. JOHN SHELDON, Architect. Quantities by the Architect.

|                              |         |   |   |
|------------------------------|---------|---|---|
| Bramley & Pepper, Kegworth   | £11,316 | 0 | 0 |
| T. & H. Herbert, Leicester   | 10,800  | 0 | 0 |
| Baynes, Nottingham           | 10,400  | 0 | 0 |
| Baines, Newark               | 9,700   | 0 | 0 |
| Hind, Nottingham             | 9,577   | 0 | 0 |
| Greenwood, Mansfield         | 9,570   | 0 | 0 |
| Youngman, Long Eaton         | 9,497   | 0 | 0 |
| Bell & Son, Nottingham       | 9,310   | 0 | 0 |
| Hodson & Son, Nottingham     | 9,265   | 0 | 0 |
| Taylor, Long Eaton           | 9,226   | 0 | 0 |
| Needham, Loughborough        | 9,200   | 0 | 0 |
| Middleton, Nottingham        | 9,200   | 0 | 0 |
| Wheatley & Maule, Nottingham | 9,190   | 0 | 0 |
| Price, Beeston               | 9,150   | 5 | 0 |
| Brown, Long Eaton            | 9,127   | 9 | 0 |
| Fullalove, Long Eaton        | 9,120   | 0 | 0 |
| Vickers, Nottingham          | 9,090   | 0 | 0 |
| POXON & RICE, Long Eaton     |         |   |   |
| (accepted)                   | 9,000   | 0 | 0 |
| Shaw, Ilkeston               | 8,827   | 0 | 0 |
| Architect's estimate         | 9,180   | 0 | 0 |

The Contracts are for three-fifths only of the plan.

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**LERWICK.**

For Building United Presbyterian Church, Lerwick. Mr. R. G. SYKES, Architect, 17 Sweeting Street, Liverpool. Quantities by the Architect.

*For whole of the Works.*

Sinclair & Hardie . . . £1,880 0 0

**MAIDSTONE.**

For Chancel and Chancel Aisles in Restoration of All Saints Church, Maidstone.

*Chancel.*

Bunning . . . £2,030 0 0

*Chancel Aisles.*

Bunning . . . 810 0 0

Mr. Bunning's tenders for the Second Section of the work as above have now been accepted. The full lists of tenders for the entire work appeared in *The Architect* of January 3, 1885.

**MILLPORT.**

For Constructing Breastwork, Forming Pathways, &c., along the Foreshores between the Garrison and the Cross House, Millport. Messrs. NIVEN & HADDIN, C.E., 131 West Regent Street, Glasgow.

Bain, Bo'ness . . . £1,074 14 1

Murray, Dunoon . . . 893 0 1

Crawford, Millport . . . 869 5 0

Black & Eadie, Johnstone . . . 810 9 9

Russell, Bearsden . . . 802 14 7

M'Graw & Shields, Millport . . . 797 2 8

Bolton, Glasgow . . . 752 6 4

J. & W. Osborne, Ayr . . . 752 0 6

Sharp, Johnstone . . . 747 12 6

Dobbie & Dickson, Kilsyth . . . 734 9 0

STARK & SONS, Kilsyth (accepted) . . . 728 9 8

**NEWPORT.**

For Building Toll-house at Watergate, Newport, Isle of Wight.

Dyer . . . £155 10 0

Cooper & Son . . . 137 10 0

Tharle . . . 126 0 0

Hayles, Shanklin . . . 115 10 0

JENKINS (accepted) . . . 79 0 0

*Rest of Newport.*

**NOTTINGHAM.**

For Alterations and Additions to Warehouse, Wilford Street, Nottingham. Mr. A. H. GOODALL, Architect.

CUTHBERT BROS. (accepted) . . £171 10 0

**OSWALDTWISTLE.**

For Street Works, Oswaldtwistle. Mr. HUNTER, Surveyor.

*Lord Street.*

CLEGG (accepted) . . . £234 5 8

*Harelock Street, &c.*

BURY (accepted) . . . 470 6 0

**SMETHWICK.**

For Erection of a Chapel for the Methodist New Connexion at Smethwick, near Birmingham. Mr. J. H. BURTON, Architect, Ashton-under-Lyne.

Whitehouse, Smethwick . . £2,298 10 6

Marshall, Smethwick . . . 2,277 0 0

Horton, Brierley Hill . . . 1,830 10 0

W. & J. Webb, Birmingham . . 1,740 0 0

Barker & Sons, Birmingham . . 1,725 0 0

Blackham, Birmingham Heath . . 1,720 0 0

Hunter, Willenhall . . . 1,652 0 0

Bate, Dudley . . . 1,650 19 7

Loughton, Birmingham . . . 1,650 0 0

Harper, Oldbury . . . 1,640 0 0

Trow & Sons, Wednesbury . . 1,600 0 0

Gowing & Ingram, Birmingham . 1,597 0 0

Harley & Son, Smethwick . . 1,595 0 0

Bradley & Co., Wolverhampton . 1,575 0 0

Walton Bros., Smethwick . . 1,561 0 0

DORSE & SON, Cradley Heath, near Brierley Hill \* . . 1,443 17 0

\* Accepted subject to certain deductions.

**SHAW.**

For Building Dwelling-house for Mr. W. K. Stott, Beal Lane, Shaw. Mr. REUBEN HINCHCLIFFE, Architect. Quantities by the Architect.

J. S. & J. SMETHURST, Hollin-

wood . . . £365 0 0

Accepted for all the work.

**RADFORD.**

For proposed Alterations and Additions to Chapel, St. Peter's Street, Old Radford, for the United Methodist Free Church. Mr. A. H. GOODALL, Architect, Nottingham.

Crosby, Radford . . . £440 0 0

Wilke, Nottingham . . . 410 15 0

Chambers, Nottingham . . . 410 0 0

Price, Carrington . . . 399 2 6

Cooper, Nottingham . . . 390 18 0

Musson, Carrington . . . 389 0 0

Cuthbert Bros., Hyson Green . . 370 0 0

Evans & Woodcock, Hyson Green . 364 15 0

Scattergood, Carrington . . . 360 0 0

PRIESTLEY, Radford (accepted) . 358 0 0

**ROCHDALE.**

For Building Purifying House at Gasworks, Rochdale.

PRESTON & DRYLAND, Smithy Bridge (accepted).

For Supply of Six Cast-iron Parifiers, 30 feet square, with Covers and Connections, Gasworks, Rochdale.

DEMPSTER & SONS, Elland (accepted).

**SHREWSBURY.**

For Building House, Kingsland Estate, Shrewsbury. Mr. R. LLOYD WILLIAMS, Architect, Park Lane, Denbigh. Quantities by the Architect.

Roberts, Denbigh . . . £3,350 0 0

Osborne, Nottingham . . . 3,322 0 0

Davies & Son, Wrexham . . . 3,300 0 0

Samuels, Wrexham . . . 3,168 0 0

Darlington, Shrewsbury . . . 2,900 0 0

Bradley & Co., Wolverhampton . 2,810 0 0

Everall & Morris, Shrewsbury . . 2,612 0 0

**SOUTH STONEHAM.**

For Sinking Well at the Workhouse, for the South Stoneham Union.

Brown, Tottenham . . . £110 0 0

Grace, Romsey . . . 67 10 0

Kerley, South Stoneham . . . 60 15 0

Merritt, Bishopstoke . . . 55 0 0

SHEPHARD, Bitterne (accepted) . 48 0 0

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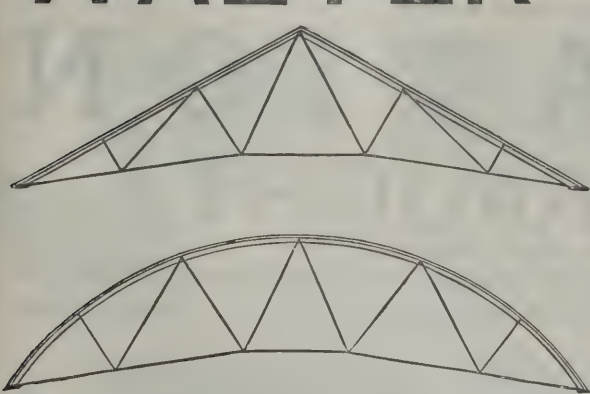
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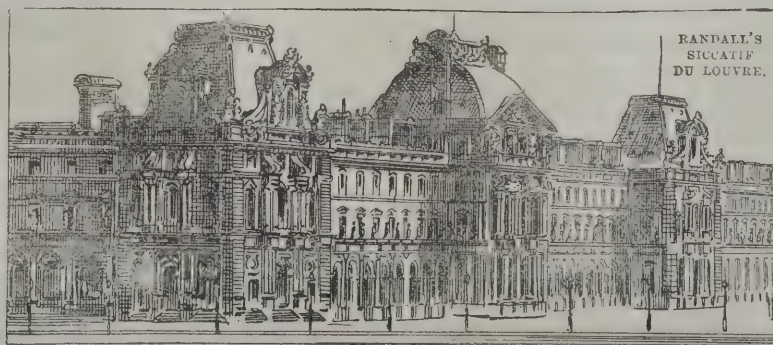
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**SOUTHWELL.**

For Erection of Grand Stand and Ring Fence for the Southwell Race Committee.

|                            |      |   |   |
|----------------------------|------|---|---|
| Adams, Nottingham          | £250 | 0 | 0 |
| Duke, Newark               | 249  | 0 | 0 |
| Maltby, Southwell          | 190  | 0 | 0 |
| WIGNELL, Newark (accepted) | 155  | 0 | 0 |

**STOCKPORT.**

For Erection of Public Baths for the Corporation of the Borough of Stockport. Mr. J. C. PRESTWICH, Architect, Leigh, near Manchester. Quantities by the Architect.

|                     |        |   |   |
|---------------------|--------|---|---|
| Cordingley & Sons   | £6,150 | 0 | 0 |
| Norbury             | 5,338  | 0 | 0 |
| Parkinson           | 5,291  | 0 | 0 |
| Warburton           | 5,265  | 0 | 0 |
| Matthews            | 5,120  | 0 | 0 |
| Winnard             | 5,050  | 0 | 0 |
| W. Brown            | 5,020  | 0 | 0 |
| Whitell             | 4,999  | 0 | 0 |
| Southern & Sons     | 4,925  | 0 | 0 |
| F. & W. Meadows     | 4,905  | 0 | 0 |
| Broadhurst          | 4,900  | 0 | 0 |
| Macfarlane          | 4,850  | 0 | 0 |
| Neill & Sons        | 4,818  | 0 | 0 |
| W. H. Brown         | 4,760  | 0 | 0 |
| Peters & Sons       | 4,705  | 0 | 0 |
| FROGGATE & BRIGGS * | 4,676  | 0 | 0 |

\* Accepted without boarding under slates.

Extra for Boarding, &amp;c., under Slates, in lieu of Plaster Ceilings.

|                   |      |    |   |
|-------------------|------|----|---|
| Whitell           | £300 | 0  | 0 |
| W. Brown          | 297  | 0  | 0 |
| Macfarlane        | 280  | 0  | 0 |
| Winnard           | 250  | 0  | 0 |
| Froggate & Briggs | 244  | 0  | 0 |
| Matthews          | 231  | 0  | 0 |
| Parkinson         | 229  | 0  | 0 |
| Southern & Sons   | 215  | 0  | 0 |
| Neill & Sons      | 215  | 0  | 0 |
| F. & W. Meadows   | 208  | 16 | 9 |
| Cordingley & Sons | 205  | 0  | 0 |
| Norbury           | 198  | 0  | 0 |
| W. H. Brown       | 194  | 0  | 0 |
| Broadhurst        | 185  | 0  | 0 |
| Peters & Sons     | 154  | 0  | 0 |
| Warburton         | 148  | 0  | 0 |

**STOCKPORT—continued.**

Extra for Paving in White Glazed Bricks to Bottoms of Plunge Baths.

|                   |      |   |   |
|-------------------|------|---|---|
| Cordingley & Sons | £293 | 0 | 0 |
| Parkinson         | 255  | 0 | 0 |
| Winnard           | 230  | 0 | 0 |
| Warburton         | 208  | 0 | 0 |
| Matthews          | 207  | 0 | 0 |
| W. Brown          | 200  | 0 | 0 |
| Whitell           | 200  | 0 | 0 |
| Southern & Sons   | 195  | 0 | 0 |
| Neill & Sons      | 194  | 0 | 0 |
| W. H. Brown       | 192  | 0 | 0 |
| Broadhurst        | 190  | 0 | 0 |
| F. & W. Meadows   | 189  | 0 | 0 |
| Peters & Sons     | 189  | 0 | 0 |
| Froggate & Briggs | 189  | 0 | 0 |
| Norbury           | 170  | 0 | 0 |
| Macfarlane        | 135  | 0 | 0 |

**TONBRIDGE.**

For Building Infirmary at the Tonbridge Union Workhouse. Messrs. H. H. &amp; E. CRONK, Architects, Tunbridge Wells.

Quantities supplied.

|                              |        |    |   |
|------------------------------|--------|----|---|
| Paramor & Son, Margate       | £4,270 | 0  | 0 |
| Gallard & Son, Southborough  | 4,095  | 10 | 0 |
| Balaam Bros., London         | 4,050  | 0  | 0 |
| Jarvis, Tunbridge Wells      | 3,960  | 0  | 0 |
| Proctor, Woolwich            | 3,900  | 0  | 0 |
| Wheatley, Tonbridge          | 3,885  | 0  | 0 |
| Longley, Crawley             | 3,853  | 0  | 0 |
| G. & F. Penn, Pembury        | 3,847  | 0  | 0 |
| Staines & Son, London        | 3,844  | 0  | 0 |
| W. & T. Denne, Walmer        | 3,698  | 0  | 0 |
| Adcock, Dover                | 3,670  | 0  | 0 |
| Peters, Horsham              | 3,655  | 0  | 0 |
| Webster, Folkestone          | 3,650  | 0  | 0 |
| Wise, Deal                   | 3,610  | 0  | 0 |
| Bingham, Headcorn            | 3,597  | 0  | 0 |
| Foster & Dicksee, Rugby      | 3,590  | 0  | 0 |
| Punnett & Sons, Tonbridge    | 3,573  | 0  | 0 |
| Denne & Son, Deal            | 3,480  | 0  | 0 |
| Wallis & Clements, Maidstone | 3,332  | 0  | 0 |
| Austin, Tonbridge            | 2,868  | 6  | 0 |

**WOBBURN SAND.**

For Erection of Two Villas at Woburn Sand, for Mr. F. Moore. Mr. F. T. MERCER, Architect. Quantities supplied.

|                 |      |    |   |
|-----------------|------|----|---|
| Poole           | £955 | 0  | 0 |
| Sharrett        | 910  | 0  | 0 |
| George          | 900  | 0  | 0 |
| White           | 882  | 0  | 0 |
| Laughton        | 879  | 16 | 0 |
| Harrison        | 849  | 0  | 0 |
| Warton & Walker | 844  | 0  | 0 |
| Young           | 837  | 10 | 0 |

**WORKSOP.**

For Construction of Roads at Worksop.

|                           |        |    |   |
|---------------------------|--------|----|---|
| Ellis, Worksop            | £1,438 | 18 | 4 |
| Whittingham, Darnall      | 1,354  | 12 | 4 |
| Sykes, Blighton           | 1,258  | 14 | 9 |
| Allsop, Worksop           | 1,243  | 0  | 0 |
| Allen, Sheffield          | 1,215  | 0  | 0 |
| Illingworth, Sheffield    | 1,160  | 0  | 0 |
| Hill, Sheffield           | 970    | 1  | 9 |
| MAKIN, Worksop (accepted) | 915    | 0  | 0 |

**WORTLEY.**

For Additions to Infirmary at the Workhouse, Wortley Union. Mr. G. A. WILDE, Architect, Bank Street, Sheffield.

|                       |        |    |   |
|-----------------------|--------|----|---|
| Lister                | £1,963 | 18 | 0 |
| Booker                | 1,700  | 0  | 0 |
| Fidler                | 1,500  | 0  | 0 |
| Maslin                | 1,482  | 0  | 0 |
| Greenwood             | 1,450  | 0  | 0 |
| Tomlinson & Sons      | 1,435  | 0  | 0 |
| Astling               | 1,424  | 0  | 0 |
| White                 | 1,380  | 0  | 0 |
| Morton                | 1,379  | 0  | 0 |
| Grayson               | 1,365  | 0  | 0 |
| Nelson                | 1,335  | 0  | 0 |
| Rodley & Sons         | 1,306  | 10 | 0 |
| Foxon Bros.           | 1,293  | 0  | 0 |
| Harrison              | 1,285  | 0  | 0 |
| R. Marsden            | 1,284  | 0  | 0 |
| Eyre                  | 1,270  | 0  | 0 |
| Laycock               | 1,265  | 0  | 0 |
| Andrews               | 1,245  | 13 | 5 |
| W. MARSDEN (accepted) | 1,216  | 17 | 0 |

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*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



**WIGAN.**

For Building Wing to the Royal Albert Edward Infirmary, Wigan. Messrs. T. WORTHINGTON & J. G. ELGOOD, Architects, Manchester.  
PRESTON, Wigan (accepted for builder's work).

**WINDERMERE.**

For Building Detached Residence, with Studio, Ellerthwaite Estate, Windermere. Mr. ROBERT WALKER, Architect, Windermere. Quantities by the Architect.

Martindale, walling and mason work.

Stables, joiner work.

Armstrong, plastering.

Bonney, plumbing.

Croft, painting, &c.

Total amount, £1,100.

**NOTES ON NOVELTIES.****The "Calda" Heater.**

Mr. G. SHREWSBURY, of Newgate Street, E.C., has just issued a new catalogue of the gas-baths, patent "Calda" water-heaters, gas-stoves, &c., of which he is the patentee and sole maker. The "Calda" or instantaneous water-heater is made in various sizes and styles, and will give a warm bath of 20 to 25 gallons in ten minutes; and a useful form of the apparatus is the "Liliputian Calda," which will give three pints of hot water per minute, and is designed for lavatories, butlers' pantries, nurseries, sitz-baths, &c. In the "Calda" heaters the water has no contact with the gas, and thus is delivered pure when heated. Patent burners are also used, which swing out for convenience of lighting, &c. The outlet for the hot water is at the top of the "Calda," so that, being always full of water, no injury would ensue if the gas is lit before the water is turned on. The inside is of tinned copper, and so constructed that no loss of heat can take place. The list of articles begins with gas conservatory boilers and portable hot-water apparatus. These appear in various sizes, to

heat larger or smaller areas as may be required, and are suitable not only for conservatories, vineries, propagating-houses, &c., but for halls, shops, counting-houses, harness-rooms, schools, &c. The list also comprises a variety of baths for cold water and for hot water. They are fitted with patent gas and air burners, &c., which effect a great economy in consumption of gas, and give a hot bath in thirty minutes. These include the "Marvel" gas-bath, the "Excelsior," the oblong taper and the registered universal gas-baths, the semi-Roman bead-bath, &c., all these being made right or left handed. Gas cooking-stoves in numberless varieties, from sausage-cookers and grilling, roasting, boiling, and bread-toasting stoves to large stoves and restaurant cookers, and also combination stoves for cooking or heating purposes. Among the gas-heating stoves a numerous choice is afforded of every kind, as well as of ornamental descriptions. And among other useful articles are portable washing coppers and stoves for special purposes, such as laundry stoves, tailors' and hatters' stoves, &c. The prices are certainly noteworthy as being extremely moderate.

**Crystalline Glass.**

The samples of this glass that we have seen suggest that the crystalline glass can, with little trouble and with very small expense, be employed to serve useful purposes while producing exceedingly pleasing effects by way of decoration and ornament; and it is very handy where it is desirable to obstruct the vision without interfering with the perfect transmission of light. The CRYSTALLINE GLASS COMPANY, LIMITED, who are the sole manufacturers of the patent crystalline glass, are desirous of calling the attention of architects and builders, and of workers in stained and painted glass, and the public generally, to this novelty, by the use of which excellent effects can be produced in stained glass work for all purposes, ecclesiastical or domestic. By the process white, coloured and tinted glass of whatever description can be crystallized to any desired outline, leaving portions of the same sheet plain, and by gild-

ing or silvering crystalline glass an appearance of frosted gold or silver is given. This enriched crystalline glass may be used in the decoration of chimney-pieces, tiles, finger-plates, &c., and an endless variety of objects, and is specially adapted for the decoration of public buildings, restaurants, &c. As far as ornamental effect goes, nothing of its kind could look prettier by transmitted light.

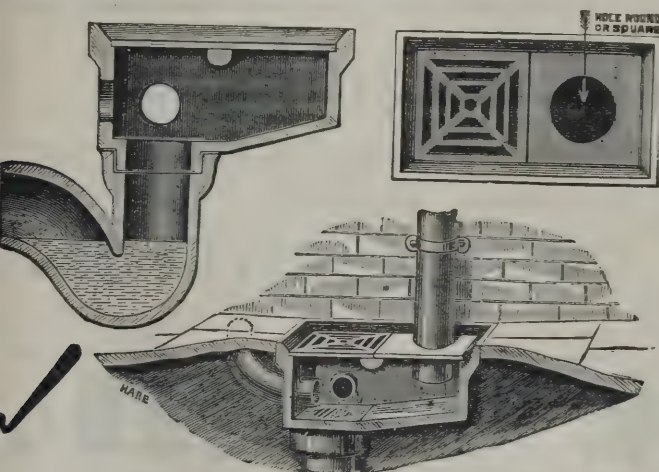
**TRADE NOTES.**

AMONG the many works executed for use at Easter by Messrs. Jones & Willis, are a carved oak reredos for Kirkby Ravensworth Church, and an oak pulpit for the church at Magourney, Ireland. They have also in hand a memorial pulpit for Ballycastle Church, in memory of the late Dean of Eilpon.

HAVING completed their Suakim contracts, Messrs. Clark, Bunnett & Co. (Limited) have received further instructions from the War Office to erect iron storehouses at the Royal Army Clothing Depot, Pimlico. The Company have also orders to fix their hydraulic lifts for the London Tramway Company and the new Liberal Club, Birmingham.

MESSRS. KAYLL & Co., of Leeds, have obtained the contract for the glazing of the new Presbyterian church which the committee have decided to build in Harrogate. The architect is Mr. Newcomes, of Newcastle. They have also the order for the leaded lights for St. Mary's Church, at the Holme, Doncaster, the foundation-stone of which Sir Edmund Beckett, laid on the 12th ult. They are also glazing Blyth Church, at Retford, for Mr. Hodgson Fowler, architect.

ON Easter Day two stained-glass windows on the north and south sides of the chancel of the church of St. John the Divine, Brookland, were unveiled. The window on the north side represents two scenes from the Resurrection of Our Lord, and that on the south the commission to St. Peter and the Ascension. The windows have been executed by Messrs. Wailes & Strang, of Newcastle-on-Tyne.

**BELLMAN'S PATENT GULLY.**

*This Gully possesses the following advantages:—*

**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.**

**Avoids all Splashing.**

**Ventilates the Pipes and Trap.**

**Forms Drain for Area or Surface.**

**Is easy of Access for Clearance.**

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

*The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.*

DESCRIPTIVE CIRCULAR ON APPLICATION.

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Also SINGLE GULLIES, for Sink Wastes only, price 3/9 each.

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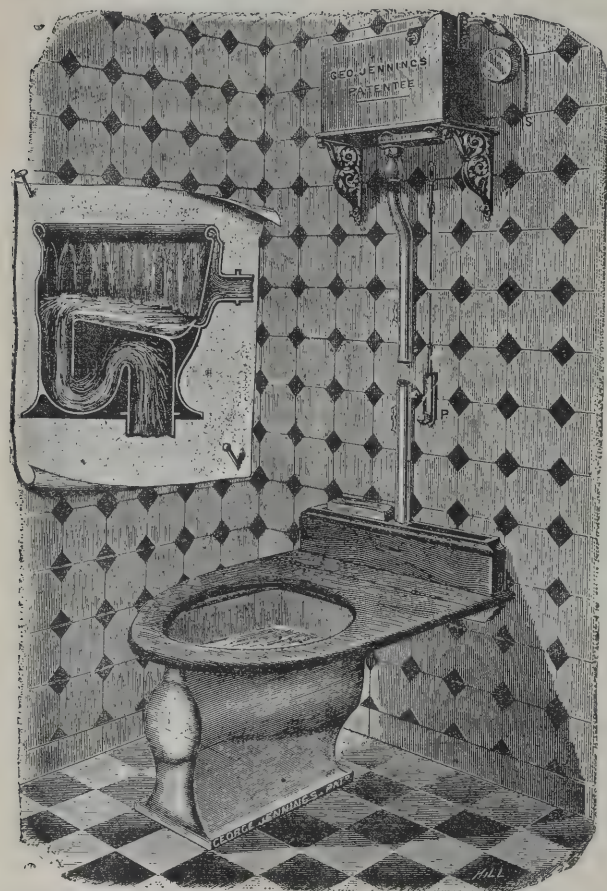
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A PORCELAIN VASE set on a tiled or mosaic floor, within walls or a dado of glazed tiles. The usual wood framing, forming a storehouse for the retention and accumulation of damp, dirt, and disease germs, with the joints, crevices, and imperfections in work which the closet enclosure so often conceals, is entirely abolished. The seat is hinged, permitting free access for use as a slop sink or urinal, and for cleansing, so that the entire apparatus and space can be freely washed down. For this latter purpose the floor should be slightly sunk, and laid to fall to a grating, with waste carried through the external wall, and terminating in a copper flap valve to prevent draught.

The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with "**JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN**" 5 feet over, with  $1\frac{1}{2}$  inch down pipe, ten apples (averaging  $1\frac{1}{2}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "1 ge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

**GOLD MEDAL AWARDED.**

THESE CLOSETS are already in use in Hospitals, Banks, Hotels, Offices, Private Residences, &c., with most satisfactory results, and, fixed in the manner described, in appearance and action leave nothing to be desired. By the novel arrangement of the supply to Basin, as shown in the sectional sketch annexed, the whole surface is well flushed and cleansed, whilst the bottom of Basin and Trap are thoroughly scoured by a concentrated rush of water which insures the instantaneous removal of the contents, thus overcoming the inherent defects in the many imitations recently produced of "**JENNINGS' MONKEY-CLOSET**" (the original form of wash-out watercloset), which was invented and patented by G. J. in 1852.

**GEORGE JENNINGS,**  
SANITARY ENGINEER, STANGATE LONDON,  
A VISIT TO THE SHOWROOMS IS RESPECTFULLY REQUESTED. S.E.

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VICTORIA WHARF, MORTLAKE, S.W.  
BLACK HORSE LANE, RICHMOND; and

LEA BRIDGE WHARF, CLAPTON.



# The Architect.

## THE WEEK.

THE Archbishop of CANTERBURY has given his decision on the dispute respecting the restoration of the Peterborough tower. His Grace recommends the establishment of an executive committee composed of the Dean and four canons, with four committeemen nominated by them, and eight members of the present Restoration Committee, and that it should, upon its formation, immediately resume the question and determine the course to be pursued. He gives a judgment which in the meantime will stand as the decision of the arbitrator, and says he has had to choose between the replacement of the pointed arches of A.D. 1380, with provision for a future superstructure, and the substitution of Norman arches for Pointed, with a Norman storey above, working from relics which have been found in the course of the restoration of the cathedral, and which probably formed an arcade before 1380. After recounting at length the advantages and disadvantages of each proposal, His Grace recommends that the first plan be adhered to, and that the recovered fragments of the Norman tower be fitted together and retained to illustrate the antiquities of the cathedral.

A LETTER has appeared in the *Times* from a Moham-  
medan newly arrived in England, expressing surprise that, although London possesses so many Mohammedans, there is not a single mosque in the city. He believes there are a sufficient number of followers of the Prophet in England to allow of a fund being raised to erect and furnish the building. If the suggestion should be carried out, it will give an opportunity for a class of work that will be picturesque and novel.

THE saw-mill case to which we referred last week has been decided. It will be remembered that damages amounting to over 80,000*l.* were claimed by Messrs. SOMMERVILLE from the Glasgow and South-Western Railway Company. After a trial which lasted for six days, the award of the jury was as follows:—For building, machinery, &c., 14,572*l.* 16*s.* 3*d.*; for land claim, 25,987*l.* 7*s.* 4*d.*; 10 per cent. compulsory allowance, 2,598*l.* 14*s.* 9*d.*; for trade claim, 9,499*l.* 8*s.* 3*d.*; total award, 52,658*l.* 6*s.* 7*d.* If it be true that the railway company had offered 55,000*l.* in settlement of the claim, the plaintiffs cannot congratulate themselves on the result.

THE exhibition of the works of EUGÈNE DELACROIX was closed on Wednesday last. Up to Sunday 60,000 frs. had been received. As the expenses should not be excessive, the results will go far towards the cost of the erection of the statue of the painter. The committee have shown good sense in permitting many art students and teachers to have free admission to the galleries.

THE Salon Jury for Painting have concluded their labours in judging of the works sent in for admission. The works sent in numbered 5,614, and out of those 2,500 have been accepted for admission. It has been customary to allow friends of the painters to visit the galleries on varnishing-day. This year there will be a restriction. Anyone who is desirous to see that part of the preparation for the annual show can do so by paying 10 frs., a sum which will be handed over for the benefit of the soldiers wounded at Tonquin.

THE final report of the Cathedral Commissioners is a document which demands the attention of every one who wishes to see the cathedral buildings preserved in the condition that corresponds with their historical and architectural importance. Lord HAMPTON's return gives the large expenditure since 1840, amounting in some cases to over 100,000*l.* But it is to be feared that deans and chapters can no longer be equally liberal. The Commissioners say that any fresh legislation should deal generously with regard to the depressed pecuniary condition of the cathedrals, and which is due to no fault of the cathedral

bodies. On the subject of the repair and preservation of fabrics, the Commissioners think that if the fabrics of the cathedrals are to be permanently secured the question of an increase of caputal resources from property in the hands of the Ecclesiastical Commissioners must be fairly dealt with, as on that property the cathedrals have a claim. A feeling is indicated that in recent arrangements with the Ecclesiastical Commissioners this matter has not received adequate consideration.

It is surprising that Devon, which is so important a county, does not appear to have ever possessed armorial bearings or a common seal. Some of the boroughs, such as Exeter and Plymouth, have that distinction, but not the county. The clerks of the peace generally use their own crest or monogram on the official seals. Mr. HAMILTON, who has brought this curious subject before the quarter sessions, has carried resolutions to the following effect:—“That it be referred to the County Buildings Committee to inquire and report (1) whether the county of Devon has ever possessed armorial bearings or any common seal of that nature; (2) whether it is desirable that such armorial bearings should be revived or assumed by the county; (3) if so, what steps should be taken to attain that object.”

At the meeting of the Wolverhampton Town Council on Monday, it was reported that the estimated receipts of the School of Art for one year were 500*l.*, making no allowance for increase of income from the larger number of scholars that ought to be expected in the new building, which had been presented to the town by Mr. PHILIP HORSMAN. The expenses were also estimated at 500*l.* It was recommended that a head-master should be appointed at a salary of 250*l.* a year. An assistant-master will be required, at a salary of 70*l.* a year.

THE report on the quality of the water supplied by the metropolitan water companies during March is a favourable one. The whole of the samples are declared to be perfectly clear, bright, and well filtered. Considering the condition of the river during the month, and the additional care needful to effect good filtration, it is surprising that not one of the 188 samples examined by the analysts contained so much as a trace of suspended matter.

THE collection of engravings and etchings belonging to Mr. W. B. SCOTT, and which will be sold at SOTHEBY'S during the whole of next week, is interesting not only from the rarity but from the value of the subjects. The engravings go back from the present time to the infancy of the art, and several have not been described by BARTSCH or other authorities. One print of a female figure in a religious habit appears first to have been made on the plate (probably some soft metal) by a series of punctures or indentures, which must have been made from the back of the plate as they indented on the paper. That they were in the plate originally, and not made in the paper afterwards, is evident from the accumulation of the ink in many of them. A collection which has been brought together with so much patience and skill deserves to be purchased as a whole for one of the provincial museums.

THE promoters of the Manchester Ship Canal were found to have gained a part of their case on Wednesday. The Committee of the House of Lords, before whom the Bill has been brought, decided to take the engineering evidence by itself; and, if it failed, then to declare that the commercial evidence was unnecessary. The case has occupied a great many days. The counsel for the Bill argued that the objections to the scheme involved a mass of absurdities and contradictions, and that it might be proved as much from the opposing witnesses as from those of the promoters. It was not likely men such as Mr. ABERNETHY and Mr. LEADER WILLIAMS, after all that had happened since the scheme was projected, had gone hopelessly wrong, and he asked the Committee to come to the conclusion that they did not believe in the engineering objections of the opponents. The Committee decided to allow the Bill to proceed, and this decision has been held to mean that ultimately the preamble will be declared proved.



## THE NEW OFFICES IN PARLIAMENT.

THE discussion in the House of Commons on the vote of 10,000*l.* for the new Admiralty and War Offices afforded another example of the absurdity of the Parliamentary mode of deciding questions of taste. All sorts of side issues were introduced, including wars and rumours of wars, iron ships, the administration of NAPOLEON III., the fortifications of Portsmouth, as well as the differences between Classic and Gothic. It is needless to say that the defects of the Home and Colonial Offices were once more proclaimed with the customary amount of exaggeration.

That there are grounds for objections against the designs may be taken for granted, although they were not mentioned in the late discussion. The authors have been over-anxious to produce effects, and their employment of sculpture on every point of vantage is suggestive of a practice that is common in modern competitive work. If successful designs were always carried out in their entirety the sculptors would have no reason to complain of want of commissions; but, as a matter of fact, the figures are as remote from realisation as the blue skies which are seen if the perspectives are coloured. When Mr. BERESFORD-HOPE and Mr. GREGORY objected to the overloading of ornament that is apparent, they were paying a compliment to the designs as competition drawings. The architect is lucky who is able to allure criticism from his architecture to his sculpture. Figures are invaluable for taking objections on their shoulders. They are as useful as the oddly-clipped poodle which the Athenian statesman kept for the purpose of diverting attention from defects in himself.

It is remarkable that none of the opponents of the proposed buildings were able to bring forward objections that were valid. The expense of producing the lithographs distributed among the members appears to have been thrown away, for no one seems to have studied them with care. The reasons that were given for and against the new building were not derived from architectural study. Mr. BERESFORD-HOPE, who led the attack, suggested that the carcass of the building and the distribution of the rooms should be accepted, but that a new mode of clothing the carcass should be adopted. This strange proposition may be a sarcasm on Renaissance building, but it can hardly have been offered seriously. When nothing better is to be derived from the wisdom of Parliament, it was not worth while to postpone the arrangements to give the House an opportunity of examining the matured designs.

No one will be surprised to find that the credit for any improvement which is found in the new designs is claimed by the Office of Works. Mr. AYRTON, we remember, posed as the corrector of the designs for the Law Courts, and the grumbling which is likely to endure while the building lasts will be a testimony to the value of his interference. Let us see what is the value of the official inspirations. Mr. SHAW-LEFEVRE said that Messrs. LEEMING had on his suggestion thrown back the front of the building 35 feet, had enlarged the great court from 80 feet to 95 feet, had completely modified the Whitehall front, and had altered the position of the campanile. The second alteration is probably the one that is of most consequence. The abstraction of a piece of ground 35 feet in width, in so valuable a position, for the sake of effect would have appeared a fatal step to a designer, and if so much liberality were contemplated it should have been announced. The competitors understood that the space was to be utilised to the utmost, for if a rigid economy had not been paramount, why was not the whole frontage between Spring Gardens and the Horse Guards made available? As a rule, the setting back of a building is an advantage, but it will not be without drawbacks in this case. The houses in Whitehall will appear more in the way, and the new offices will not correspond with the remaining Government Offices or with the Banqueting House, in all of which the ordinary conditions of street architecture are frankly accepted. The benefit gained by removal of the campanile is likewise questionable. Campaniles have been supposed to be places in which bells were to be hung, and the use of bells or the receptacles for them is not apparent in connection with the army and navy. In the original design the tower marked the end of the building. It was like a long note of admiration at the close of a sentence; now it is like the note trans-

posed to the middle of a clause, and its use becomes still more mysterious. The self-laudation with which the alterations have been introduced does not appear to be as well earned as may be supposed. But it is now evident that there is a desire to make the new building more obtrusive than any other Government office, just as if it were a memorial of the Administration. Many of the competitors will regret that they had not worked out the conditions in this spirit, while the more credit is to be given to the interpreters who at such a distance could read the signs of the times aright.

The example of Parliament is sometimes followed, and it may be well to warn the public that the long period over which the building works are to be spread is not conducive to economy. It may appear a wise arrangement to put fractions of the cost into a dozen budgets; but what builder's calculations would be made on such a basis without a large margin for risk? If it be necessary to have one part of the building completed before another, that could be done without much loss being incurred. But if economy is to be considered, the Government proposals will have to be greatly altered.

## THE LIVERPOOL ARCHITECTURAL SOCIETY.

THE good city of Liverpool is supposed to be an energetic place, but somehow the local Architectural Society is disposed to take life easily, and they appear to be well seconded in that respect by their printers. We have received this week a parcel of reports of the proceedings; they all bear the date 1884 on the cover, but the meetings that are recorded began as far back as 1882. Amidst the feverish efforts that are made to have one part of a speech read and discussed by the public before the second part is uttered, the Liverpool system of reporting is reposeful by its contrast. There must be firm faith in the value of the papers that are printed so long after they have been written. Let us, however, be guided by the proverb, Better late than never, and consider what has been vouchsafed to us.

According to the last report the Society possessed 141 members, and the expenditure being 140*l.* 15*s.* 9*d.*, was about a pound a-head. The year closed with a balance in hand of 219*l.* 7*s.* 4*d.*, and it is therefore plain that amidst the depression the Society is solvent.

At one period the Liverpool architects affected the theoretical style of essay, and were fond of discussing those interesting problems which appear to be beyond solution: "Old times are changed, old manners gone," and in Liverpool, as elsewhere, the so-called practical questions have gained the ascendancy. We seem to hear an echo of a long past age in reading Mr. BOULT's "Architectural Revivalism," and what he says about philosophy and theology, the Sanhedrim, EMERSON, and the Classical divinities. How strange the paper seems in company with those on "A Novel Brewery," "Building Regulations," "Our Villas," "Compensations," "The Law of Light and Air," "Specifications and Quantities," "Constructive Ironwork," "Supervision of Buildings," and the like! Is the change for the better? We cannot answer in the affirmative. There is a strong desire for knowledge at the present day in architectural societies, but is it not in many cases suggestive of imperfect training, and of an eagerness to obtain the results of experience without cost or trouble? At one time the societies were modelled on the plan of the old academies, and the reader of a paper expected to receive as much as he gave. Sometimes he met his superiors, always he found peers, in front of him; but now for a paper to be successful it must be of a didactic kind, and the more elementary the better. Is it surprising that diplomacy has to be exercised in London and the provinces for the purpose of inducing men to read papers under the new conditions, and that discussion is becoming every week more difficult?

Everyone who knows anything of Lancashire is aware that Liverpool hardly esteems its architects as well as they deserve; perhaps we ought to say that the citizens care little for Lancashire architects, and this constitutes one of the points of difference between the city which imports and the city which manufactures cotton. The President of the



Society, Mr. PARSLÖW, testifies to so strange a prejudice, when he says that he heard a distinguished town councillor exclaim, "Architects in Liverpool! Why, there are no architects in Liverpool." Under the circumstances it shows rather exalted generosity to find the President expressing the feelings of the members in saying, "We are highly pleased to have in our midst buildings by the privileged architects of London and elsewhere: when an architect from outside Liverpool obtains by competition a commission to erect public buildings in our city we congratulate and welcome him." It is difficult to see how brotherly love can further go, unless it should become inspired by the remarkable liquor which is described in one of the papers under the name of "Panacea," or the fermented buttermilk which the President admires.

Architectural education has afforded so much discussion from time immemorial that it may be compared to one of those admirable stags which are kept for London sportsmen, and are always ready to start. Mr. BARE, who read a paper on the subject, appears to have been in earnest, for he ascribes the failure of the Society's classes to the architects, who should have supported them, and not to the students. Mr. BARE even proposes that the printing of the transactions should be discontinued, and the money applied to the classes and prizes. The suggestion is deserving of consideration outside Liverpool, for costly volumes of which only portions are read, and by the authors of the respective portions, are an anomaly in times like the present. Transactions used to suggest something profound, and a row of quarto volumes formed an imposing kind of decoration for a bookcase; but when it is discovered that they find their way to waste-paper shops, there to keep company with Blue-books, the charm has ceased. One-half of the expenses of the Liverpool Society arises from the printing of essays. Surely there are other things, as deserving of encouragement as literary composition, which are neglected.

The paper on the building regulations in Liverpool, by Mr. GOLDSTRAW, suggests the discrepancies which exist in England, and for which the by-laws of the Local Government Board were supposed to furnish a remedy. Strange as it may appear, an Act of Parliament which, with the grim humour of legal draughtsmen, was called a Sanitary Act, empowered the construction of streets of not less than 3 feet in width unless the length exceeded 300 feet, when a width of 4 feet was graciously permitted. There was a likelihood that the arrangement might lead to inconvenience between the occupants of opposite dwellings, when a police magistrate discovered in 1872 that no projections were illegal which did not interfere with the traffic on the streets. If that worthy magistrate could be transferred to a metropolitan bench, and retained his faculty of interpreting prohibitive clauses in an artistic sense, there would be a hope for London architecture; but stupid people who had no eye for the picturesque, and desired to have a 3 feet clear space from ground to cornice, went to the expense of a special Act to regulate projections in Liverpool. Apparently 30 inches is now the limit.

An account is given by Mr. JOYNSON of villas which have been erected on the Clifton Park Estate, Liscard. They are set back 45 feet from the road, and evidently the auctioneer's favourite adjective "commodious" can be applied to them. The dining-room measures 20 feet by 16 feet, and, with the morning-room, 20 feet by 31 feet; the hall is 15 feet by 10 feet, the drawing-room 20 feet by 16 feet, and the kitchen 15 feet by 14 feet. Each pair stands upon 1,500 square yards of land, and for building with red brick fronts, backs and interior walls of grey bricks, Stourton stone dressings, and pitch pine in timber work, the cost was 1,800*l.* a pair, which appears to be moderate, but we find no illustrations to suggest the character of the villas. There is a reference in the paper to some concrete villas at Edgbaston, designed by Mr. EDGE, where the outer walls are 14 inches and the interior walls 9 inches thick. It was found that the cost was somewhat less than half the cost of ordinary brickwork.

Contracts in general, and the relation of builders, surveyors, and architects to building owners are suggested by a question (evidently referring to some local case), which was put by the President in one of his addresses. Supposing that in the quantities for the erection of a building costing 11,000*l.*, work to the value of 1,000*l.* was omitted,

who is to pay for it? The answer is the building owner, and looked at in one way that is the inevitable answer. But if, as so generally occurs, contingencies become a factor in estimating, it is difficult to say what should come under that head. To our minds, it seems strange that half a dozen or more builders could examine a set of plans for a building, unless its character or the conditions were exceptional, and be satisfied with quantities that were short to the extent of 10 per cent. The simplest cubing ought to discover the error. We can hardly suppose the case to be imaginary; and to learn that architects, surveyors, builders, and their clerks can be all alike blind when an error does not come home to them, must compel the Liverpool people to conclude that the distinguished town councillor had reason on his side when he said there were no architects in the city. Omissions to the extent of 1 per cent. are bad enough to come unexpectedly on a client when cotton is dull, but 1,000*l.* in a job of 10,000*l.*, and no consolation from the President of the Architectural Society, would be enough to make a Liverpool merchant lose his equanimity. We venture to doubt whether the panacea and the fermented buttermilk combined would form a nepenthe sufficiently overpowering to bring oblivion of the wrong. It is to be hoped that Sir EDMUND BECKETT may not alight on the address, which affords a colourable excuse for letters to the *Times* on architects' neglect of their clients' interests.

Architects, as a rule, hesitate about allowing their designs to be dissected for the benefit of others. The self-sacrifice of Mr. HORNBLLOWER in handing over drawings of a pier in wrought-iron to form a subject for Mr. GUTHRIE'S scalpel was a commendable act. The operation suggests that the factor of safety had not been exceeded. "The building then has passed the ordeal of analysis," says Mr. GUTHRIE, "and shows that the architect has judged the proportions admirably if he did not calculate them. I should not in any case recommend an architect to rely entirely upon judgment in any building of importance." And he goes on to point out how a better architectural result might have been insured if more economy had been exercised. The strength of the lantern and spire, it appears, is very far in excess of the part beneath, which has to sustain the brunt of the battle. "If my fees for analysis," says Mr. GUTHRIE, "were half the value of the superfluous metal, I should have three or four times more than enough to pay me for my trouble, and the architect would have so much more money to spend in further beautification." This is advice which should be remembered by architects, and when it is considered that the aid of experts is often obtainable without expense, there is no excuse for weighting a structure with superfluous plates and bars.

The difficult question of official supervision of buildings was again brought up in the paper by Mr. ELLICE CLARK. The author said that he had been in communication with one hundred and seventy local authorities in Lancashire and Cheshire, and his conclusion was that, while there is a similarity between their regulations, "each and every one of them bears the stamp of individuality." The minimum thickness of a wall in Oldham has to be 9 inches, in Manchester 4½ inches will suffice. It is found that the elaborate model by-laws are not an unmixed blessing. The details are supposed to be evident to the humblest capacity, supposing any one connected with the administration of local government dare be described as endowed in that way, and consequently they give rise to jobbery. In one case, where cottage building is carried out at a rapid rate, the executive officer is a retired master butcher, who is paid 150*l.* for amusing himself as an amateur with building. Mr. ELLICE CLARK, as an official, complains of the hesitation which is shown in depositing plans with the authorities. He ridicules the idea that the drawings can be used for other purposes, when it is so easy to obtain copies of drawings of all kinds in the building journals from week to week, and suggests that a good deal of professional work would be available if the documents required by local authorities were prepared by architects. Speaking from what he knows has occurred in his own district, Mr. ELLICE CLARK says that "during the past seven years upwards of 2,000,000*l.* have been expended in Hove in the erection of 2,500 houses; of these not one per cent. has been designed by architects." This is a startling statement, and is enough to excite grave reflections as to the state of professional organisa-



tion. What takes place in Hove is repeated all over the country.

The selection of the site for the proposed cathedral was discussed during a couple of meetings, and the difficulty of the case was apparent from the number of the suggestions. There was no voting, and consequently it is impossible to say which site secured most supporters. It will be evident from what we have said that the directors of the Liverpool Society contrive to have subjects of a debatable kind brought before the meetings, and if the Society is not flourishing they at least are not to be held accountable.

### XAVIER SIGALON.\*

IT would have been well if some of the works of XAVIER SIGALON had been exhibited in connection with those by EUGÈNE DELACROIX, which have been lately seen in the Ecole des Beaux-Arts, Paris. For SIGALON was earlier than DELACROIX in rebelling against the cold and Classic conventionalism which was supreme in France about sixty years ago. It is also remarkable that, like DELACROIX, he was a pupil of the Baron GUERIN, one of the ultra-Classics.

SIGALON was born at Uzès, fifteen miles from Nîmes, in the South of France, towards the end of 1788. He was taught painting by an artist named MONROSE, who had set up an atelier in Nîmes, but was not of much value as a painter. He had been a pupil of DAVID, and it is quite possible that in young SIGALON'S mind his master's deficiencies were taken as marks of the Classic school in general. SIGALON obtained commissions for pictures which were to be hung in local churches, but he felt that he was adapted for work of a different kind.

He came, therefore, to Paris when he was about twenty-nine, an age which might be considered too advanced for entry into a Paris studio; but French artists resemble the great Italian in always learning. GUERIN was then considered to be a great man, and to him SIGALON went. But they did not agree, and at the end of six months the pupil left. He found that his best teachers were the pictures in the galleries of the Louvre.

In 1822 he exhibited the *Young Courtesan*, which was at once purchased by LOUIS XVIII. for 2,000 frs. It was first placed in the Luxembourg, and afterwards removed to the Louvre. It was followed by works in various styles. The *Deliverance of St. Peter from Prison* was executed for the village church of Rôbiac. His *Locusta experimenting on a Slave with the Poison intended for Britannicus* obtained the gold medal in the Salon of 1824. It is a picture in which the terror of the scene is not veiled, and the extreme realism might be ascribed to defiance of the canons which then prevailed rather than to any other cause. The work is now in the museum of Nîmes. The *Massacre of the Princes of the Family of David by Athalie*, which is the subject of our illustration, is in the museum at Nantes. A *Baptism of Christ* was painted for the cathedral of Nîmes. The *Vision of St. Jerome*, which is in the Louvre, was commissioned by the State in 1825 at 4,000 frs.; but, although dated 1829, it was not exhibited until 1831. A *Crucifixion* is in the village of Issingeaux. The two last-named works were considered to be of so high a character that the painter's name was enrolled in the Legion of Honour.

But the war between the Romantic and Classic schools was then raging, and, although there were more enthusiasts for the former, picture-buyers were opposed to new-fangled notions. DELACROIX was able to subsist if he had never sold a picture. SIGALON, on the contrary, was compelled to depend on his pencil for a living, and, when he found that commissions were not forthcoming, he threw up historical painting in despair, and, returning to Nîmes, began life anew as a provincial portrait-painter. In spite of all his honours and successes, he left Paris poorer than when he entered the city. He was not destined to remain long in the South. ADOLPHE THIERS, who had once been a newspaper critic of picture galleries, held the Romantics in esteem, and as a Minister of State he wished to befriend them. The little man was inspired with a passion for grandiose works, and was anxious to obtain a full-size copy of MICHEL ANGELO'S *Last Judgment*.

\* See Illustration.

for the Ecole des Beaux-Arts. He believed that the most capable painter in all France to undertake the task was XAVIER SIGALON, and the selection is a testimony to his insight and judgment. Accordingly the artist was summoned from Nîmes, and from the Government accepted a commission that was congenial to him. The price offered must not be judged by the modern English standard. SIGALON was to be paid 58,000 frs. for the colossal work, with an indemnity of 20,000 frs., and an annuity of 3,000 frs. He set out for Rome in July 1833, and commenced painting in the Sistine Chapel without delay. After about three years' labour SIGALON completed his copy. It was exhibited in the Baths of Diocletian, and was visited by GREGORY XVI. and the College of Cardinals. The Pope, it is said, was so delighted that he shook hands with the artist, a kind of honour that is supposed to be reserved for princes. SIGALON brought his large picture to Paris in February 1837. It was fixed in that part of the school which had formed the chapel of the Augustinian friars. THACKERAY, who saw it soon afterwards, testifies to its merit. "In the same school of the Beaux-Arts where," he says, "are to be found such a number of pale imitations of the antique, Monsieur THIERS (and he ought to be thanked for it) has caused to be placed a full-sized copy of the *Last Judgment* by MICHEL ANGELO. There is the sublime, if you please—a new sublime—an original sublime—quite as sublime as the Greek sublime." The work was considered so satisfactory that commissions for copies of the pendentives of the Sistine Chapel were given to SIGALON. He returned to Rome, but was not able to complete the work, for the painter unhappily succumbed to an attack of cholera on August 18, 1837. His death was regretted, for it was beginning to be considered that SIGALON, from his power of draughtsmanship, would supplant INGRES, while as a colourist he was superior.

The picture which we illustrate is taken from RACINE'S tragedy of "Athalie," the last work of the French poet, and one which, according to the German SCHLEGEL, was enough to gain a reputation. It has been lately revived on the stage of the Odéon; but let no one imagine that a scene corresponding with the picture is there performed. So much excitement would not be in keeping with the classical tragedy of France. The painting depicts the description given in the first act by one of the characters, JOSABET, the wife of the high-priest, of the terrible vengeance taken by ATHALIE, the widow of JORAM, when she commanded the Judean princes to be slaughtered. It corresponds with the tenth verse of the twenty-second chapter of the second book of the Chronicles:—"But when ATHALIAH the mother of AHAZIAH saw that her son was dead, she arose and destroyed all the seed royal of the House of Judah." JOASH, her grandson, was however rescued and concealed in the temple. After ATHALIAH had reigned for seven years, she was overcome by the strategy of the high-priest, and was slain at the horse gate. JOASH then ascended the throne, and was king in Jerusalem during forty years.

The Scriptural description of the massacre is very brief. RACINE, who was reverential in his treatment of the subject, goes into rather more detail. "The terrible scene," says JOSABET, "is continually revived and appals me. The place was filled with the princes. The implacable ATHALIE stood with a dagger in her hand, and urged her barbarous soldiers to the carnage. Suddenly I perceived JOASH, who was left for dead. I can still see his faithful nurse, who threw herself before the executioners and tried to save the infant whom I rescued." It is this scene which inspired the painter. The school of the Romantics sought after scenes of commotion, as was perhaps not unnatural at a time when the prosperous bourgeoisie in art and literature were esteeming themselves as the highest type of men, and the events of the Revolution were supposed to be in bad taste. SIGALON, who was inspired by the spirit of the new revolution, accordingly produced a picture which, as representative of RACINE, is one of the most remarkable productions of that time. There was audacity in compelling one of the gods of the Classics to yield a subject for their enemies, and in giving so passionate an interpretation to a tragedy that is like sculpture in its coldness. The picture is far more suggestive of a scene from MARLOWE or an early Elizabethan dramatist. As a design, it might at first sight be taken for one by DELACROIX, and on this account it



suggests the question whether SIGALON had not been one of the sources of inspiration for the chief of the Romanticists. The arrangement of the figures is admirable. By leaving so large a space around ATHALIE, the queen, who appears almost like a tigress, becomes the most important figure. The poet's lines are freely interpreted, and not merely infant princes, but men and women are introduced as the victims of the enemy of the House of Judah. The contrast between the negro mercenaries and the fair princesses, can only be rendered by means of colour. On the right we see the rescue of JOASH, and the affrighted JOSABET is reminiscent of a figure in MARC ANTONIO's *Massacre of the Innocents*, which RAPHAEL designed.

There are critics who will say that M. SIROUY's version is better than the original. This artist very often sacrifices himself out of reverence for other painters, and forsakes his own easel in order that he may translate a picture he admires into black and white. Few etchings or engravings will bear comparison with the chalk drawings which M. SIROUY has produced after artists so unlike as MULREADY, HAMON, PROUDHON, &c., and he is unique as an interpreter of SIGALON and DELACROIX.

### THE VATICAN MANUSCRIPTS.

THE catalogue of the manuscripts in the Vatican Library is at last nearly completed. Proofs of the two first volumes have been presented to the Pope by a commission attached to the library, who have worked under the direction of Cardinal Pitra. The burden of the preparation has been borne by Père de Rossi and the two Scottish Jesuits, the Fathers Stevenson. The praise given by the Pope to the volumes can accordingly be claimed by them as their meed.

It may appear strange to those who have had little acquaintance with work of the kind, that the catalogue should need so long a time for preparation. But experts can quite understand the causes of the delay. The Vatican Library is not much behind the other great libraries in Europe in the production of its catalogue. The classified catalogue of the French manuscripts in the Paris Library, which was commenced in 1739, was discontinued after the fourth volume in 1744, and has been since in abeyance. The catalogues of the Imperial libraries in Germany and Austria are little more than simple tables with names and dates, giving no clue to the contents which a perfect catalogue should do. Although a large and zealous staff is employed in London, we are far from possessing a complete set of abstracts of the documents in the Record Office in Fetter Lane. Elsewhere the manuscripts are mainly local, but in the Vatican they relate to the world, and the labour of abstracting becomes correspondingly difficult.

It is remarkable that an attempt to classify the archives of the Church was commenced as far back as A.D. 303, but the persecution of Diocletian was a sufficient reason for the discontinuance of the undertaking. The work was resumed when peace was restored by Constantine, and there is evidence that in the fifth century the scribes possessed offices in the Lateran, not, of course, in any part of the existing buildings, but in those attached to the Basilica of A.D. 324, which still confers the title of "Ornium urbis et orbis ecclesiarum mater et caput" on Galilei's and Borromini's church. As the Patriarchium of the Lateran was the first of Christian schools, it is believed that the manuscripts were then arranged in chronological order. In addition to the epistles of the popes and documents relating to the administration of the universal church, the Lateran Record Office possessed manuscripts of the works of the early Fathers, theologians and ecclesiastical historians, documents relating to the persecutions, copies of letters between popes and bishops, acts of councils, and the like. It was there that Gelasius, who continued the history of Eusebius, deposited his controversial works against Nestorius and Eutyches; there the African bishop Vigilius sent the versified version in Latin of the Acts of the Apostles, which had been made by the subdeacon Arator, who held office under Athalaric the king of the Ostrogoths, and to it Pope Gregory the Great bequeathed the Homilies, which were in course of delivery when the Lombards swooped down on Italy. The library was a storehouse for works which had to be copied for the churches

throughout the world as then known. In return, bishops and abbots sent manuscripts which were found in their districts. We know, for example, that Ælfridus, the master of the Venerable Bede, carried to the Lateran a copy of a work by St. Jerome, which is supposed to be the Amatine Codex now in the Laurentian Library of Florence. In course of time, the treasures grew to be too numerous for the halls. It was necessary to obtain a new library, and accordingly one was built near the Arch of Titus. But Rome was for many centuries liable to pillage, and a secret depository was constructed on Monte Soracte, which commands the whole Campagna. In pagan times the hill was considered to be under the protection of Apollo, and in the Middle Ages there was supposed to be a mystery about it. Subsequently the records were divided between the Vatican and Castle San Angelo. In spite of all the precautions the manuscripts could not be preserved in the vicissitudes of the Eternal City, and the historian must ever lament the loss of materials which would have explained what now seems obscure in the history of Europe from the fourth to the twelfth century.

Pope Innocent III., early in the thirteenth century, organised a system for the Papal archives which still is respected, and from that time until now the series of records may be said to be complete. When about one hundred years afterwards the seat of the popes was translated to Avignon, the records and other manuscripts were despatched to the French city. Many of the manuscripts of classic writers found their way afterwards to other libraries, and it was in vain that succeeding popes claimed them back. On the return of the popes to Rome the collections were reorganised. The enthusiasm of Nicholas V., as a bibliophile, about the middle of the fifteenth century, has extorted praise from even Gibbon, who says that "from the ruins of the Byzantine libraries, from the darkest monasteries of Germany and Britain, he collected the dusty manuscripts of the writers of antiquity, and wherever the original could not be removed, a faithful copy was transcribed and transmitted for his use." In eight years the Pope collected five thousand volumes—an enormous number, since all the copies had to be made by hand. The Royal Library of France at that time did not contain more than nine hundred volumes. Sixtus IV. (1471) divided the collections into two parts—one is what may be called the governmental section, which is now being summarised for the benefit of scholars; the second is the great library, containing in enclosed cases about 100,000 volumes of books and 24,000 manuscripts.

The Pope also had a catalogue prepared by Platina, which is still in existence. A second was prepared in 1533 by Sabeus. In the reign of Paul III. an alphabetical index of the Greek manuscripts was compiled by Michel Rosaita. Sixtus V., who was one of the most energetic of the popes, devoted great care to the Vatican Library. There is a tradition that he compelled Fontana, the architect, to have the building completed within a year, and only allowed another year for the elaborate decoration. In the catalogues he introduced the system of giving specimens of the writing, and we may, in consequence, consider that the plan of having facsimiles of painters' signatures in the catalogues of galleries is derived from the Vatican. An instalment of a general catalogue of Greek manuscripts was printed in 1575, of which there was a second edition at a later period. During the seventeenth century sundry inventories of the same kind were issued.

Simon Assemani, the prefect of the Vatican Library, issued three volumes relating to the Oriental books between 1756 and 1759. It was arranged that the catalogue should be continued, but the fire of 1768 destroyed the fourth volume, which was then being printed, and the notes which had been prepared for a continuation of the series. It was reserved for Cardinal Mai, the restorer and discoverer of palimpsests, to publish a supplement to Assemani's volumes, and a catalogue of the papyri.

The library has always been guarded with the utmost strictness, and there used to be a decree exhibited in one of the rooms by which any man—including the librarian and assistants—who removed a single volume without the permission in writing of the Pope was excommunicated. It should, however, be remembered that the manuscripts are the property of the human race; that nearly all of them are unique, and that during fifteen hundred years the library has been very often pillaged. The



French in 1795 were not unlike the French in 1527, when the Constable's name became a byword to frighten Roman children. It was one of the conditions of the treaty of Bologna, in 1796, that five hundred of the Vatican manuscripts were to be selected by Republican commissioners and removed to Paris, and with repeated exactions of a similar kind it is not inexcusable if the guardians of the library have hesitated in revealing the riches of the collection. But the history of the catalogue makes it plain that there has been likewise a desire from the first to let the treasures be known as far as was compatible with security.

### YORK ARCHITECTURAL ASSOCIATION.

A LECTURE on "The Decorated Period of Gothic Ornament" was delivered last week by Mr. G. W. Milburn, at the Victoria Hall, Goodramgate. The president, Mr. A. Pollard, occupied the chair. The lecturer described at length and with numerous sketches upon the black board how the thorn, vine, ivy, oak, and maple were introduced in the formation of capitals, crockets, diapers, spandrels, &c. At the conclusion, the President moved a vote of thanks to the lecturer, which was seconded by Mr. G. J. Monson, and carried. Mr. T. S. Worthington was elected an honorary member of the Association. The subject of the churches scheduled to be discussed or demolished was brought forward, but after a short discussion the question, for want of time, was postponed for future consideration.

### TESSERÆ.

#### Irish Churches.

GEORGE PETRIE, LL.D.

THE ancient Irish churches were almost invariably of small size, their greatest length rarely exceeding eighty feet, and being usually not more than sixty. One example only is known of a church of greater length, namely, the great church or cathedral of Armagh, which was originally erected of the length of 140 feet. In their general form they preserved very nearly that of the Roman basilica, but they never present the conched semicircular apsis at the east end, which is so usual a feature in the Roman churches, and the smaller churches were only simple oblong quadrangles. In the larger churches there is a second oblong of smaller dimensions extending to the east, and constituting the chancel or sanctuary, in which the altar was placed, and which is connected with the nave by a triumphal arch of semicircular form. These churches have rarely more than a single entrance, which is placed in the centre of the west end; and they are very imperfectly lighted by small windows splayed inwards, which do not appear to have been ever glazed. The chancel is always better lighted than the nave, and usually has two and sometimes three windows, of which one is always placed in the centre of the east wall, and another in the south wall; the windows in the nave are also usually placed in the south wall, and, excepting in large churches, rarely exceed two in number. The windows are sometimes triangular-headed, and more usually arched semicircularly, while the doorway, on the contrary, is almost universally covered by a horizontal lintel, consisting of a single stone. In all cases the sides of the doorways and windows incline like the doorways in the oldest remains of Cyclopean buildings, to which they bear a singularly striking resemblance. The doorways are most usually plain, and the windows still more rarely exhibit ornaments of any kind. The walls are always perpendicular, and generally formed of very large polygonal stones, carefully adjusted to each other, both on the inner and outer surfaces, while their interior is filled up with rubble and grouting. In the smaller churches the roofs were frequently formed of stone, but in the larger ones they were always of wood covered with shingles, straw, reed, and perhaps sometimes with lead.

#### Revival of Gothic.

REV. J. L. PETIT.

If we consider Gothic architecture to be one of the creations of a great national spirit, we shall at once account for the difficulty of reviving or reproducing it. The Gothic mind aims at constant progression; is not satisfied with retracing steps already trodden; it will not work readily in the trammels of imitation; it will rather attain new glories than strive to recover those that have passed away. We shall find that we have great architects as well as great masters in every other branch of art, if we do not suffer them to be cramped with needless restrictions. The old spirit is not dead in us; nay, it never was more active. Research scarcely owns a limit; science has unveiled marvels surpassing Northern mythology. A summary of its

triumphs would now be a puerile declamation of familiar facts, as it would formerly have been thought to be upon impossibilities and absurdities. The higher our aims the fairer is our prospect of success. In every other matter, while we honour and value the works of our predecessors, we make use of them as the groundwork of further acquisitions; we continually build upon them, instead of merely striving to attain to the same elevation. If a system becomes obsolete we do not attempt to revive it, unless we find upon examination that a recurrence to it will give a fairer start in the pursuit of truth. Our reverence for great names does not make us look at any perfection hitherto attained as a standard or limit, it rather urges us on to a higher perfection; we feel that all we have done in science and art is but an advance towards the truth, not a realisation of it. We may indeed start anew from a given point, if by so doing we may hope for new and great results; but this is a very different thing from taking as our standard of excellence some point that has already been reached. It is true that the desire for improvement and progress has often led to decline and fall. The movement may for a time be downwards, but not backwards; the Gothic mind cannot, in its very nature, be either stationary or retrograde. It is because we have Gothic blood in us that we cannot revive Gothic architecture.

#### Magnitude in Architecture.

EDMUND BURKE.

To the sublime in building greatness of dimension seems requisite, for on a few parts, and those small, the imagination cannot rise to any idea of infinity. No greatness in the manner can effectually compensate for the want of proper dimensions. There is no danger of drawing men into extravagant designs by this rule; it carries its own caution along with it. Because too great a length in buildings destroys the purpose of greatness, which it was intended to promote, the perspective will lessen it in height as it gains in length, and will bring it at last to a point, turning the whole figure into a sort of triangle, the poorest in its effect of almost any figure that can be presented to the eye. I have ever observed that colonnades and avenues of trees of a moderate length were without comparison far grander than when they were suffered to run to immense distances. A true artist should put a generous deceit on the spectators, and effect the noblest designs by easy methods. Designs that are vast only by their dimensions are always the sign of a common and low imagination. No work of art can be great but as it deceives; to be otherwise is the prerogative of nature only. A good eye will fix the medium betwixt an excessive length or height (for the same objection lies against both), and a short and broken quantity, and perhaps it might be ascertained to a tolerable degree of exactness.

#### Salviati's Mosaics.

PROFESSOR ARCHER.

In the Salviati process the drawing is made and coloured on paper, an adhesive surface is applied to it, and then the tesserae of comparatively thin glass are laid face downwards and adhere to the paper picture. The back is then covered with mastic cement, which is pressed so as to fill in the crevices between the tesserae, and to form a solid back; the whole of the back and sides are then enclosed in a zinc case, and the whole becomes a perfectly firm plate, as compact as a slab of marble, only two-thirds of an inch in thickness, instead of ten or twelve, as in the case of Roman and Russian mosaics, and weighing hundredweights instead of tons.

#### Photography and Art.

W. W. STORY.

One does not alone see with the eye, but with the mind and the soul, and nothing truly artistic can ever be produced mechanically. It is the transfusion of nature through the spirit of the artist which alone can give us a work of art. A mere photograph is very rarely and exceptionally a picture, but it is a most valuable basis for one, provided it be not followed too slavishly. The dead, soulless eye of the camera-obscura gives us only the corpse of what, when we look at it, is full of life and feeling. It repeats statistically, not artistically, the dead facts, with all their accidents of mould and stain and breakage, insisting upon them with always too strong an emphasis; it takes no heed of the difference between colour as colour and as light and dark, thus falsifying the true impression on the eye, giving, for instance, yellow as dark, while it really is positive and produces the effect of light, and restating blue, which is negative, as positive light; and it also takes no heed of planes of distance, representing all parts as upon one plane. Doubtless, despite these very essential defects, it is of great value and interest. It has nothing to do with sentiment, but simply to repeat facts—the husks and shells of things. *Tant pis* for the sentiment if it cannot get itself recorded—being intangible and invisible. Yet the truth of the photograph is always insisted.



on—at least it does not lie, we are told. Yet, despite of all its pretensions, it does lie. Its planes are false; its colours falsely reported; its chiaro-oscuro wrong. Besides, there are two kinds of truth: one truth to the imagination, which may be given in the slightest sketch, and by suggestion create or revive the spirit of a form or place; one truth to the literal facts, from which the soul that animated them may have fled, and which may want the magnetic touch that was the life of the thing itself. Of course, if one could have them both it would be best; but, if one must choose between them, is not the spirit better than the letter?

#### The Colouring of the Temple of Theseus.

A. VON QUAST.

The pigments were not merely a thin glazing of colour to stain the marble, but were applied as a thick opaque coating upon it, so as to entirely conceal the material beneath; and of such coating the Temple of Theseus retains more traces than any other. For the most part the colour, especially that produced by blue smalt, has quite disappeared, leaving only a gray crust on the surface; yet the original hue may even now be detected. In this edifice the prevailing colours were blue and red, both of a full, deep tone, yet so applied that one or other of them formed a darker ground, relieving that placed upon it. The corona was a full blue, and the guttæ beneath it a brownish-red tint. The leaves of the foliage on the cymatium were alternately red with blue streaks and blue with red ones; while the intervals between the leaves were filled up with green, which last-mentioned colour is that of the small leaves on some of the lesser mouldings. Some of the coffers were painted of a brownish-red, inclining to violet, against which green ornament relieves itself. Others, on the contrary, show red stars on a blue ground. The plain architrave of the portico was a bright red, while the frieze was blue with figures in relief upon it, painted in their natural colours, or, in the language of heraldry, proper. The walls themselves were yellow, as is proved by the traces of that colour still remaining on them. How the columns were coloured it is not easy now to ascertain. Apparently only the echinus of the capital and the edges of the flutings were painted, while the flutings themselves displayed the pure and highly-polished white marble.

#### Roofing Slates.

J. BEETE JUKES, F.G.S.

The finest and largest roofing slates seem to be those of a bluish-grey or pale-green colour. When they become either very red or quite black they are more brittle and more readily decomposed, owing probably to the presence of peroxide of iron in the one and carbonaceous matter in the other.

#### Æsthetics.

PROFESSOR FLEMING.

Æsthetics (*aisthesis* = perception or feeling) is "that science which refers the first principles in the arts to sensation and sentiment, as distinguished from mere instruction and utility," the science of the beautiful and the philosophy of the fine arts. Various theories have been entertained as to the idea of the beautiful by Plato, Plotinus, and Augustine. In modern times the term "æsthetics" was first used in a scientific sense by A. Baumgarten, a disciple of Christian Wolf. In his "Æsthetica," 2 vols., 8vo, Frankf., 1750-58, he considered the idea of the beautiful as an indistinct perfection or feeling accompanying the moral ideas. Mendelssohn and others identified the idea of the beautiful with the idea of the good. Shaftesbury and Hutcheson regarded the two ideas as intimately connected. At the close of the eighteenth century æsthetics was scientifically developed in Germany by Kant, and has been zealously prosecuted by Fichte, Schelling, and Hegel.

#### English Houses.

SIR ARTHUR HELPS.

There is probably no branch of human work in which mal-organisation or non-organisation is more visible than in building. Here, too, it will be found that several primary considerations have never been settled. Ask an ordinary builder what thickness of what material is requisite to keep out noise, and you will find it is a question he has never considered. Yet surely it is one of the first necessity. Then, again, in building it seems never to have been considered that families differ in number; and, accordingly, wilfully ignoring this consideration, great contractors take large plots of ground and cover them with exactly similar houses, which are perhaps equally unsuitable to large and to small families. The buildings, however, look all alike outside, which is held to be a most attractive circumstance. They are turned out something like the toys for children. Yet surely, even as far as gain is concerned, greater profit would inevitably follow greater convenience. Nowhere

is routine more observable than in building. Lady Mary Wortley Montagu, when she revisited England after being in the East, observed that everybody's reception-room seemed to be constructed after the fashion of a grand pianoforte; and the pianoforte style has held its ground ever since, though very little can be said of its merits. Again, one would have imagined that climate would be much considered by architects and builders, whereas they often seem to think it a slight matter, and houses are constructed after the same pattern for wet and dry, for cloudless and beclouded districts. Occasionally, amongst primitive people, these manifest realities are thought of and allowed for; but, when you come to highly-civilised communities (which ought, by the way, to furnish the best builders), buildings are turned out, for the most part, in a set pattern, and that a bad one.

#### Cutting Timber.

SIR JOHN ANDERSON.

The strength of a piece of timber depends upon the part of the tree from which it is taken. Up to a certain age, the heart of the tree is the best. After that period, it begins to fail gradually. The worst part of a tree is the sap wood, which is next the bark. It is softer than the other parts of the wood, and is liable to premature decay. The deleterious component for the sap wood is absorbed if the tree is allowed to grow for a longer period, and in time the old sap wood becomes proper timber fibre similar to heart wood. Hence the goodness of a tree for timber purposes depends on the age at which the tree is cut down. When young, the heart wood is the best; at maturity, with the exception of the sap wood, the trunk is equally good throughout, and when the tree is allowed to grow too long, the heart wood is the first to show symptoms of weakness and deteriorates gradually. The best timber is secured by felling the tree at the age of maturity, which depends on its nature as well as on the soil and climate. The ash, beech, elm, and fir are generally considered at their best when of seventy or eighty years' growth, and the oak is seldom at its best in less time than one hundred years, but much depends on surrounding circumstances. As a rule, trees should not be cut before arriving at maturity, because there is then too much sap wood, and the durability of the timber is much inferior to that of trees felled after they have arrived at their full development.

#### Brickwork.

PROFESSOR RANKINE.

The following principles are to be observed in building with bricks:—(1) To reject all misshapen and unsound bricks. (2) To place the beds of the courses perpendicular, or as nearly perpendicular as possible to the direction of the pressure which they have to bear, and to make the bricks on each course break joint with those of the courses above and below by overlapping to the extent of from one-quarter to one-half the length of a brick. (3) To cleanse the surface of each brick, and to wet it thoroughly before laying it, in order that it may not absorb the moisture of the mortar too rapidly. (4) To fill every joint thoroughly with mortar, taking care at the same time that the thickness of mortar shall not exceed about a quarter of an inch. In order to prevent the use of too great a thickness of mortar, it is usual in specifications to prescribe a certain depth, which a certain number of bricks shall not exceed. For example, if the bricks are  $2\frac{3}{4}$  inches deep, it may be specified that four courses of bricks, when built, shall not measure more than 1 foot in depth, a condition which implies that the average thickness of mortar in the joints shall be  $\frac{1}{4}$  inch. (5) To use no bats or pieces of bricks, except when absolutely necessary, in order to make a "closure," that is, to finish the end or corner of a wall, or the side of an opening, and even then, to use no piece less than half a brick.

#### Coating Water Pipes.

J. F. BATEMAN, F.R.S.

When pipes are coated with asphalt they will deliver a much greater quantity than any estimated results. The 4-feet pipes at Glasgow were calculated to deliver 20,000,000 gallons in twenty-four hours with 5 feet per mile inclination. They have delivered 26,000,000 with  $3\frac{1}{2}$  feet. The expense of asphalt was about 5s. a ton.

**Allerton, near Cannes.**—When describing this building on March 21, we omitted to state that Mr. E. C. Soper, of Cannes, had acted as clerk of works, and superintended the entire erection of the building under the architect, Mr. Waterhouse, A.R.A.

**Messrs. Chubb & Sons** have subscribed 500*l.* towards the Guarantee Fund of the Colonial and India Exhibition, which is to be held next year in London. The fund amounts at present to 152,950*l.*



## NOTES AND COMMENTS.

THE colossal statue of *Liberty*, which was beaten out of a vast number of plates in Paris according to the model of M. BARTHOLDI, seems fated to suffer grievances. By what enthusiasm and self-denial a figure 120 feet in height was created may one day be related. The plates were numbered, put up by means of temporary rivets, and when all were found to be complete were taken down, put aboard barges on the Seine, and brought to Rouen in safety. There they still lie. A French transport was assigned by M. FERRY to bring the plates to New York, and it is expected from Cherbourg every day. But it is uncertain whether the cargo will be delivered. Eight years ago the United States Congress resolved to undertake the conservation of the statue. That supposes the work will be complete, including the apparatus for the electric lighting of the flambeau. Congress will not, however, vote a dollar towards the completion of the pedestal and the erection of the figure, owing, it is believed, to the prejudices of the German population in the States. An improvised meeting has been held on board one of the American steamers, and subscriptions amounting to 4,000*l.* have been promised. They have not been paid, and until that sum is in the bankers, M. BARTHOLDI's plates will remain without an owner. The transaction does little credit to the States.

THE costume ball of the Royal Institute of Painters, which is to be held next month in Piccadilly, will be preceded by a series of *tableaux vivants*, entitled a "Masque of Painters," which will be representative of the great artists from PERICLES to REYNOLDS. There are to be six groups, viz.:—Greece, arranged by Mr. A. SACHEVEREL COKE; Italy, by Mr. WALTER CRANE; Germany, by Mr. J. D. LINTON and Mr. W. DENDY SADLER; France and Spain, by Mr. R. CATON WOODVILLE; Holland, by Mr. E. A. ABBEY and Mr. T. WALTER WILSON; England, by Mr. SEYMOUR LUCAS and Mr. CHARLES GREEN. The whole will be described in verses written by Mr. EDMUND W. GOSSE, and spoken by Mr. J. FORBES ROBERTSON as Chorus.

THE late GUSTAVE DORÉ was more esteemed in London than in Paris. Here he was supposed to be a nineteenth-century MICHEL ANGELO; in Paris he was believed to be an admirable illustrator of books, who might have been a painter if he had been taught. There was a sale last week of the pictures left in the artist's studio. Not one was purchased for a public gallery in France. The largest price was given for the *l'Aigle*, and it was only 250*l.* One of the Scotch landscapes, in which DORÉ was at his best, was sold for about 140*l.*, and another for 50*l.* The models for sculptured figures were sold with the right of reproduction, but the prices may be judged from M. DUMAS having obtained a large group, representing *Christianity*, for 8*l.* DORÉ's industry was that of a giant, and there was an immense quantity of works remaining in his studios. In spite of the low prices, they realised together nearly 5,000*l.* DORÉ contemplated an illustrated edition of "Shakespeare," and, it is said, demanded a million of francs for his designs. No English publisher was sufficiently enterprising to accept the offer. Some of the sketches for "Macbeth" were sold at about 5*l.* a piece.

THE photographs which have just been published by the Society for Photographing Relics of Old London would indicate that, in spite of time and change, the metropolis is inexhaustible in its picturesqueness. This year the portfolio is essentially a legal one. As Middle Temple, Inner Temple, Gray's Inn, Clement's Inn, Clifford's Inn, and Staple Inn have been utilised, it is only the adherents of Lincoln's Inn who have any right to complain. Architecturally the subjects are most interesting. We have the gateway to the Middle Temple, which an astounding advertisement cannot vulgarise, and the still more stately entrance to the Inner Temple; Fountain Court, taken on a day when the water was laid on more profusely than is customary, the grand hall, where so many feasts and revels were held, and in which "Twelfth Night" was played; the rival hall at Gray's Inn, with some of the best "bits" about the Courts. In

addition to the stately buildings, there is a sheet of smaller subjects, including the *Wooden Midshipman*, which is as familiar to the readers of "Dombe and Son" as Captain CUTTLE himself. The quality of the photographs is up to Mr. DIXON's usual standard, and Mr. MARKS may again be congratulated on his success in producing so many excellent plates for a very small subscription.

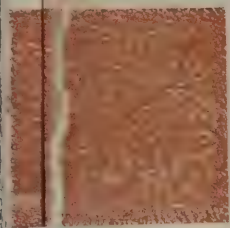
M. CHARLES GARNIER is this year the most popular architect in France, since he stands at the head of the Salon Jury with eighty-two votes. Whether the position is owing to respect, or as compensation for the proposal to remove his opera house, has not been stated. The remaining members of the jury are MM. QUESTEL, BRUNE, BAILLY, VAUDREMER, ANDRÉ, DIET, HÉNARD, BÆSWILWALD, DAUMET, NORMAND, and SEDILLE. The supplementary jurors are MM. RAULIN and GINAIN. The outsiders who received the highest votes were MM. CORROYER, BALLU, MAYEUX and GUILLAUME.

It has been found necessary to overhaul the roofs of the Cathedral of St. Peter in Geneva, where an enormous mass of *débris* had been collected during a couple of centuries. The strange things which have been discovered would go far towards a solution of the difficult question about what becomes of all the pins. Among the odds and ends are a child's primer dating from 1545, a Testament on parchment of the same period, fragments of manuscript and of earthenware, &c. How they soared to that position will afford subjects for speculation to the Swiss physicists. The greater part of the objects will be sent to the public library of Geneva.

Two competitions have lately been decided. In one, for a new church at Mosley Common, near Tyldesley, Mr. WORTHINGTON, F.R.I.B.A., reported in favour of a design by Mr. F. H. OLDHAM, of Manchester. The building is to be undertaken without delay. The second competition was for the public buildings in Newcastle-under-Lyme, for which thirty-seven sets of designs, or about two hundred drawings, were sent in. Mr. T. M. LOCKWOOD, of Chester, was appointed architect. The first premium of one hundred guineas has been awarded to a design marked "For England, Home and Beauty," which was found to be the work of Messrs. J. BLOOD, W. H. SUGDEN, and W. SUGDEN & SON. The second prize of thirty guineas goes to Mr. J. W. E. TILLEY, of Belfast, for his design marked "Mind and Body," and the third of twenty guineas to Mr. H. A. CHEERS, of London, whose design was signed "Bona Fide." It is to be hoped that there will be no departure from the legitimate and honourable course in this case, and that the winners of the prize may be enabled to carry out their design. The announcement that four of the designs set aside by the assessor have been taken into the Council Room is, however, ominous. Mr. LOCKWOOD is an architect who has had a large experience; he has built municipal buildings, and the Council can be assured that he is never likely to recommend a design which would be unsuitable, or pass by a good plan in his selection.

THE architects and engineers of the Municipality of Rome have advised the suspension of the custom of illuminating the ruins of the Coliseum with Bengal lights. The reason given is that the place is dangerous, owing to the excavations which have taken place for the purpose of ascertaining the nature of the underground arrangements. The accounts of the scenic displays, especially those of a nautical kind, were a puzzle to archaeologists, and they were able to prevail on the authorities to allow the ground to be torn up, when the remains of several brick walls were seen. A correspondent of the *Standard* says:—"The huge waterlogged pit which the *savants* dug has remained yawning ever since, poisoning the air inside the building by its exhalations, and destroying, as far as destruction is possible, the beauty of the scene. But if it is true, as all who have examined these excavations will think possible enough, that the safety of the world-famed structure has been really endangered, it is difficult to measure the atrocity of the mischief done, or the indignation which will light on the heads of those who have been guilty of it."







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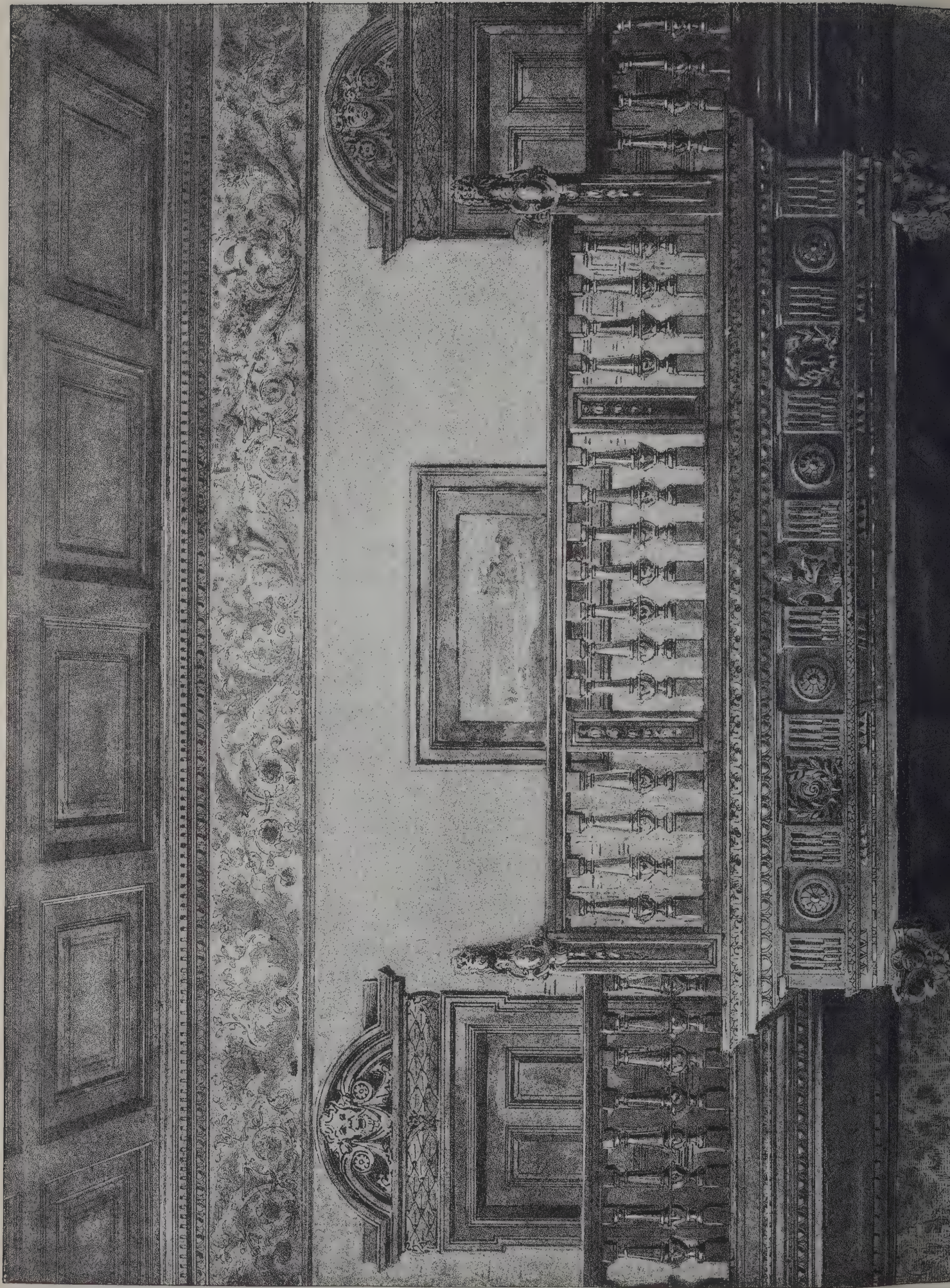


*The Revue of Whaling*  
By J. H. P. & Co. 1885

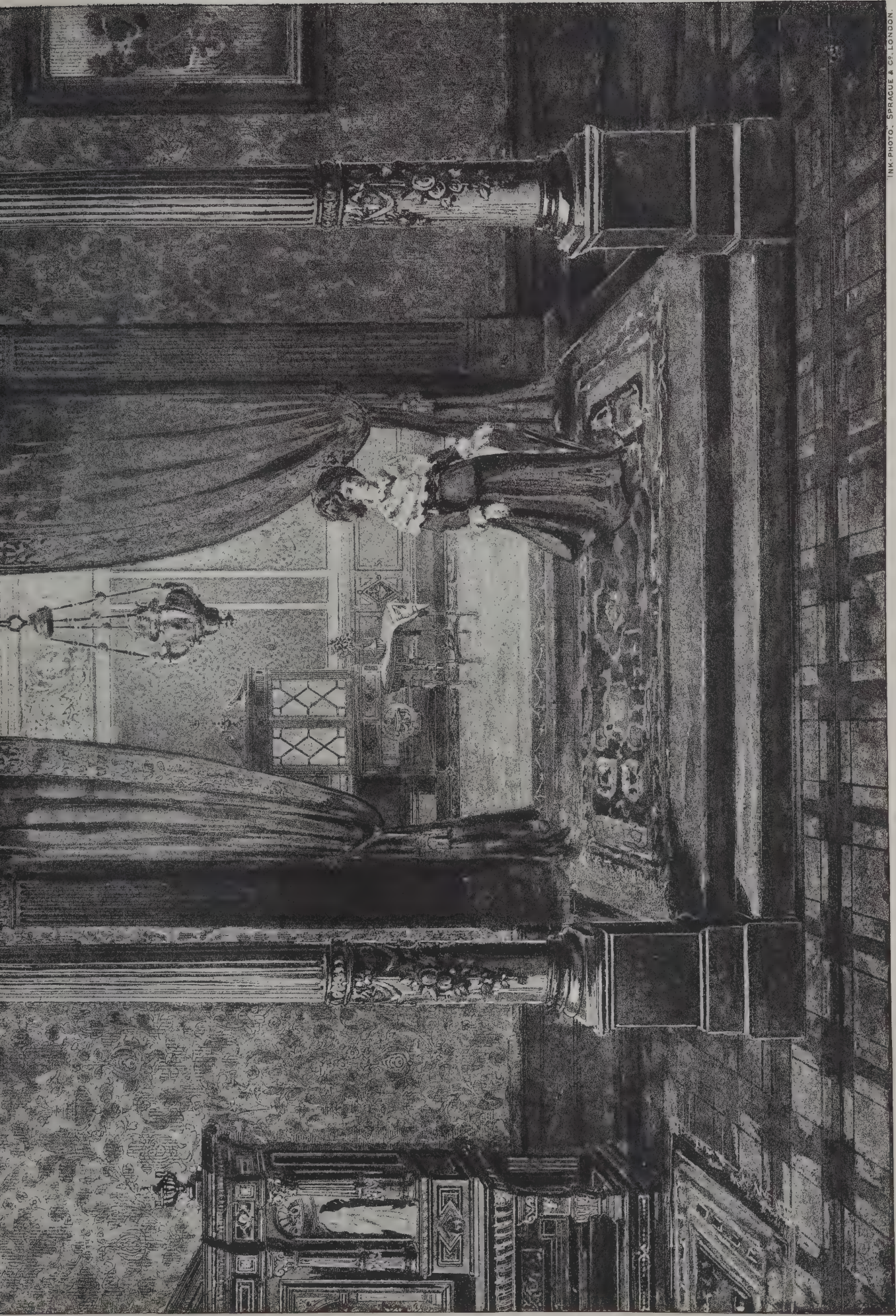












DESIGN FOR THE DECORATION OF A HALL AND LANDING.

BY CHRISTR GILL.







## ILLUSTRATIONS.

THE REVENGE OF ATHALIE.

THIS illustration has been taken from M. SIROUY's reproduction of SIGALON's picture in the public gallery at Nantes, and is described in an article on another page.

DESIGN FOR DECORATION OF HALL AND LANDING.

THIS design shows a portico brought forward into the hall, the top to form a balcony in the balustraded landing above. On the left, an ebony and ivory cabinet, with a background of terra-cotta and greyish green tapestry. The walls above a blueish-grey, plaster frieze in gold and brown, and woodwork dark oak. The drawing is by Mr. C. GILL, of 9 Fitzroy Street, W., and was exhibited at the Academy last year.

## THE PRINCIPLES OF SURFACE DECORATION.\*

BY WILLIAM MORRIS.

THERE are several things to be considered in designing for the flat surface of a wall, or for the surface of a woven hanging, &c., which make it different from the designing of a picture. In all pictures there is a distinct statement of fact, mingled with the intention of impressing the beholder with beauty of colour or line. All the forms in a picture have definite meaning; they tell a story. This is a man, so dressed, so standing; or, this is a landscape, trees grow so, mountains look so under such and such conditions of light, and so forth. But in surface decoration this is not necessary. You may have decoration, as in some Arab art, which simply aims at pleasing the eye by the repetition of certain arrangements of lines, spaces, and colours that do not recall to the mind any forms or events of nature.

It would, however, be tyrannically monotonous to confine the designer of flat ornament to such simple and meaningless forms, and such ornament would soon cease to please if used by itself. Accordingly we find that no schools of art have ever been contented to use nothing but abstract lines and forms and colours—that is, lines, &c., without any meaning. The forms of nature have been always used largely even in simple surface decorations, and especially those of the lower forms that have growth and life in them, that is, flowers, fruit, leaves, and the like. But these are used in one way or other differently from what they would be in a picture; they are not used as statements of fact, but as conveying hints of the impressions produced by the facts. And in doing this it is better to sacrifice some of the naturalness of the nature hinted at in detail in order to get a clearer impression of the idea of the nature; besides, in most of the surface ornament that we use, the design is repeated mechanically, as in a wall-paper, for instance; and this mechanical repetition necessitates a geometrical arrangement of some sort, however skilfully it may be veiled; so that if the designer ties himself to close and accurate delineation of nature he will have to limit himself to a small fragment of it repeated over and over again in geometrical order. This would certainly lead to poverty of invention in a design and most probably to awkwardness of line and arrangement. It is better, therefore, as aforesaid, to sacrifice some of the direct imitation of nature so that we may make our lines more suitable to the geometrical arrangement, and that we may remind people more of the intricacy and beauty of nature.

Moreover, we are almost always, in surface decoration, working with materials more or less intractable; we are not drawing freely with a brush or pencil, but are printing with a block, or building up a mosaic of coloured threads as in woven work. To imitate nature closely, therefore, is really impossible, and to attempt to do so is only to show our weakness, and results in a poor and commonplace effect devoid of invention. What we ought to do, I repeat, is to give a vivid idea of the impression which that nature has produced on us; and, as people have different impressions of the same place of nature, this will give rise, if we work wisely and truthfully, to that individual invention which is the greatest charm of decoration, or, indeed, of all art.

As an example, suppose a designer impressed by the beauty of a hawthorn bush and a jasmine spray. How are we to cover a room wall with this idea, carried out by block-printing on paper of a recurring design? We may at once admit that if we could paint the whole wall with a varied picture of these two pieces of natural growth, it would be far more beautiful

than any recurring design could be; but not only could this seldom be done, but also, when we had skill and time to do it, we perhaps had better go further than the bush and the spray, and paint human figures also, and tell a tale by our art. We have chosen these lower forms of nature because we can treat them less seriously without losing the idea of their beauty. Now we might simply take a bough of hawthorn and a spray of jasmine and draw them without much arrangement, and so print them on the paper. But, so done, not only would it be difficult to make them take good lines on the wall, but also our materials would but poorly imitate the delicacy of nature, and at the best, when it was all done, it would not remind us of anything beyond what was visible there—it would be just a hawthorn bough and a jasmine spray always recurring till we got tired of it. The better plan would be to form in our own brain some arrangement which would remind ourselves of the beauty of the bush and the spray, while we made it clear to everybody else that we were thinking of hawthorn and a jasmine, and to interweave these two in such a way that they would make agreeable lines on the wall, and give people a hint of the mystery and intricacy of nature. In fact, beauty mingled with invention founded on the observation of nature is the mainspring of decorative design. If it is not beautiful it has no right to exist; if it is not inventive it becomes wearisome; if it is not founded on observation of nature it can hardly be either beautiful or inventive. It is apt to become merely strange and monstrous when it departs far from nature.

Now we often, as above hinted, have to deal with materials much harder to use than mere block-printing, and we may take it as an established fact that the more intractable the material is the less we should attempt direct imitation of nature; yet, on the other hand, the more beautiful in themselves the lines of the design should be, and the design the more thoughtful and inventive. And you may take it for granted that if a man does not enjoy working in these specially difficult materials, if he does not find that the difficulties stimulate his invention, he has no real turn for designing surface ornament.

A word or two may be said as to colour generally. Students of design should remember what the uses of colour in surface decoration are, namely, to give a pleasant general impression. For wall decoration sobriety of colour is always more or less necessary; but this should never degenerate into dirty or turbid colour. The paler the colour is the purer it may be. Pale, pure colour is the best tone for wall-papers or flat painted ornament. The richer and deeper colours are best kept for rich materials, or for small confined spaces of colouring, as a cornice or pilaster, &c.

## MILLET AND MODERN ART.

A LECTURE was delivered in Edinburgh, on Saturday, by Professor Baldwin Brown, on "Millet and Modern Art." The professor commenced by saying that the Scottish Atelier Society had, with great kindness and liberality, placed their room at his disposal for an occasional lecture of a conversational kind on subjects interesting to the practical student. The Atelier was a great benefit to the cause of art in Edinburgh, as it afforded opportunity for those already in professional practice to continue a little longer their studies from nature, while those who were as yet only beginners would have the advantage of working by their side. Considering the necessarily small number that can be accommodated at one time in the life class at the Academy, such an institution as the Atelier had an important work to perform, and one of the greatest of its benefits would be that it would afford to ladies an opportunity of acquiring training for a profession in which they have shown themselves so well fitted to attain to high distinction. The occasional lectures, of which this was the first, would be sometimes on old art, sometimes on new, and especially on old art in its bearing upon the work of modern times, and their object would be to bring the working student into contact with the great achievements of the past. Dividing the painters of the world into two great classes, represented centrally by Raphael and by Rembrandt, the lecturer showed that the followers of the latter represent nature as a whole, not merely "select" nature. The modern artist does not deal with heroic subjects or beautiful forms alone, but with what is homely, and even, when judged by the classical standard, ugly. He must give artistic value to these themes by his sympathy in the broadest sense with human joys and sorrows, and by his treatment of light and shade, and colour, his touch, and technique generally. The term Realist was often misapplied, and the modern artist might give a truly ideal treatment of nature not by pre-Raphaelite copying, but by transforming common things through the magic of art. Jean François Millet was a representative of modern art at its best. A peasant and painter of peasant subjects, who refused to beautify the hard facts of life up to an academic standard, he was yet a man of intellectual culture

\* A paper prepared for explanation of designs exhibited at the Educational Conference, Manchester.



and a passionate admirer of the old masters. His nature was pure and tender, his mind stored with great thoughts. In his rustic breeding, his poetic nature, and his wide sympathies with all that was great in humanity he resembled Burns. Millet was born in Normandy in 1814, of a good peasant stock, and till the age of eighteen worked on his father's farm. He received a fair education and learned to read Virgil, whose "Georgics" influenced his after treatment of rural subjects. Having received some artistic teaching at Cherbourg, he went to Paris, and devoted himself for a time to enthusiastic study of the old masters. Finding that he could sell nothing but nude figures and studies in the style of Watteau, he determined to leave Paris and give himself entirely to peasant subjects. From the year 1849 to his death in 1875 he lived at Barbizon, near Fontainebleau, and executed his characteristic works, photographs of some of which were exhibited. What was now the keynote of Millet's work? It was not the picturesqueness or the idyllic charm of the country that attracted him, but the toiling life of the peasants in all its stern reality. He was accused of Socialistic views, and of wishing to set the poor against the rich, but there was nothing of the sort in his mind. He took facts as he saw them, and though, as he said, the charm and glory of the country was fully apparent to him, he could not help seeing as clearly the labour and suffering of the poor, and in this spirit he painted his famous *Man Resting on his Hoe*. There was a grander note, however, in Millet's work, as illustrated in his *Sower*, where the labour of the fields received a dignity from its primeval character and its connection with the changes of the eternal seasons. This was in the spirit of Virgil. The artistic character of Millet's work was then noticed. The grandeur of form he gave to his peasant figures, the art with which he glorified common or ugly themes, the force of his painting and his beautiful colouring, received illustration, and quotations from his letters were given, one of which, the lecturer said, contained the gospel of modern art:—"We can start from any point and arrive at the sublime, and all is proper to be expressed, provided our aim is high enough."

#### CLASSICAL ARCHÆOLOGY.

A COURSE of lectures on Greek art has been delivered in Edinburgh by Professor Baldwin Brown. In closing the series some remarks were made on classical archæology:—

The classical languages, he said, open up to us so large a portion of the history of human development that there is little danger that the study of them will really decline. Such studies may, however, to some extent have to be liberalised. The movement against classical studies is due largely to a natural reaction against the somewhat narrow and exclusive spirit in which they have often been pursued. Pure textual scholarship and composition have a great charm, and provide a very refined form of mental training, but it is rather a training for the few who can enter into the "inner circle" of the scholar's lore. To the mass of pupils, for example, educated on the old-fashioned English public school system, making verses is a sort of mechanical knack, and translation the acquisition of the proper number of traditional interpretations of obscure passages. In the present day more life is being infused into classical studies by stimulating the pupil's interest in the subject-matter of his books, and by illustrating them from the facts of ancient life. Here is where the study of classical archæology will find its place. Under this head are comprehended all forms of ancient art, and art among classical peoples was so universally diffused that almost everything that was made, and a good deal that was done, took an artistic form. Hence the references to art in its various forms in ancient writers are innumerable, and though it is possible to elucidate these references by the use of dictionaries and commentaries, it is far better to acquire a clear general idea of the subject as a whole, which may provide a sort of running artistic commentary on ancient literature. In the case of Homer it is possible now to reconstruct almost every one of the numerous artistic objects mentioned in the poems, either from the evidence of recent discoveries or from Egyptian wall paintings and similar sources. The lyric poets, who belong to a very interesting age of Greek art, need an artistic commentary, and so does Herodotus. In the Attic age politics become the prominent theme, and Thucydides seems to show a studied avoidance of all reference to the picturesqueness of the external life of his time. Plato, on the other hand, is full of references to this outward life, in which art was so important an element; while Aristophanes is not intelligible without the aid of archæology to explain his allusions to buildings, dress, furniture, utensils, and habits of life. The "Bacchæ" of Euripides, illustrated by Mr. Sandys from works of ancient art, is a sign of the new interest in this side of classical scholarship. The Roman poets need also this sort of interpretation, and the architecture and topography of Rome and Roman portrait statues

are the wonder of all who would read the historians with satisfactory results. It may be taken as certain that the liberalising of classical studies will consist in no small degree in bringing to bear on them the results of a knowledge of the remains of ancient architecture and art. Hitherto this knowledge has chiefly been centred in Germany, where chairs of archæology are abundant, and where it forms one of the regular subjects in the university curriculum. Hence there are many teaching positions open to those proficient in the subject, and it (archæology) becomes a recognised career. This has not hitherto been the case in Britain, but of late years a beginning has been made, from which much may be expected. There are chairs of Archæology at Cambridge, and a fine new museum of casts, such as we ought to have in this city. There is a chair at University College, London, occupied by Professor Newton, the first of British archæologists. At Oxford there has been recently founded a chair of Classical Archæology, and a Scotsman of eminence in antiquarian exploration, Mr. Ramsay, has been selected to fill it. There, too, is to be a museum of casts. At South Kensington a museum of casts has been opened, while the courses of lectures on ancient art and its remains at the British Museum are becoming increasingly popular. Further, in secondary schools efforts are being made to interest boys in their classical studies by giving them some idea of ancient buildings and works of art. No school class-room is complete without its photographs and drawings, or its casts, and the interest thus excited will be sure to increase as greater and greater facilities are given for following this branch of study. A class for classical art at this university is not only a right thing to be instituted at a great seat of learning, and in a city famous above all things for its educational facilities, but it will also be found to answer to practical requirements. It is certain that questions involving a knowledge of ancient art will find their way more and more into the examination papers for classical scholarships. It is certain, too, that those who seek masterpieces in secondary schools will find it of advantage to have a knowledge of something more than the mere text of classical writers. Ancient art has a good chance of finding itself soon in the satisfactory position of a "paying subject." There is every hope, therefore, that this study of archæology may before long find a firm footing in our midst.

#### GLASGOW ARCHITECTURAL ASSOCIATION.

THE annual opening of the Glasgow Architectural Association was held on Tuesday evening, the 7th inst., in the Langham Hotel. About forty gentlemen sat down to supper. The honorary president, Mr. Sellars, was in the chair; Mr. Chalmers, president, officiating as croupier. In proposing the toast of the evening, "The Glasgow Architectural Association," the chairman commented very favourably on its activity and the position attained; while in noticing the excellent character of the work proposed to be overtaken during the new session as generally of importance, he very specially approved of the construction class.

The past honorary president, in his remarks, speaking of the importance of good draughtsmanship, gave it as his opinion that the drawings done by members last session had surpassed those of any former one. He then announced that his prize, offered for the "best collection of sketches and measured drawings," had been awarded to Mr. William James Anderson; while the Association's prize—subject, "Design for a Boarding School for Forty Boys"—confined to pupils, was awarded to Mr. Andrew H. Prentice, a second prize going to Mr. William Watson.

The other toasts were:—"The Queen," "Army, Navy, and Volunteers," "Kindred Societies," replied to by Mr. Barclay, F.R.I.B.A., for the Royal Institute, by Mr. Watson, F.R.I.B.A., I.A., for the Glasgow Institute of Architects, by Mr. Landless, I.A., for the Architectural Section of the Glasgow Philosophical Society, and by Mr. G. W. Browne for the Edinburgh Architectural Association, of which he is president. Songs and recitations filled up the rest of the evening. Specimen sheets of the Association sketch-book and the Association prize drawings were exhibited, and inspected by the members and their friends.

The secretary's report states that there are forty-two members of the Association, showing an increase of two over last year; fourteen new members have joined and twelve have left. With its increasing membership, the Association's scope has widened so as now to offer, if not the most perfect curriculum imaginable, at least the best presently to be had; it is, therefore, deserving of even greater support than it receives from architectural students. The liability to consider drawing as the paramount object of attention is avoided by such an Association, which includes in its syllabus, essays, designing, practical and theoretical construction, &c., thus combining the merits and attractions of a literary society with that of a technical. Specially should the essays commend themselves,



as they form the unique feature of the Association among kindred societies; the position as juniors permitting the preparation and delivery of papers, both historical and critical, which adds an explicitness to the mere amount of information gained by reading; while the discussions provoked among the members tend to a readiness and a breadth of view in the consideration of matters architectural. Because of these personal advantages, as well as the desirability of professional co-operation and mutual assistance, the committee look forward hopefully to an increased roll and an augmented prosperity.

## Bygone.

*"Antiquity after a time has the grace of novelty."*—HAZLITT.

### THE HOOPING OF THE DOME OF ST. PETER'S ROME.

IF guide-books and other descriptions of Rome are to be taken as evidence, it would seem that among the "things not generally known," the iron bands which encircle the drum and dome of St. Peter's may be included. Soon after Bernini had made staircases and niches in the great piers it was observed that the cupola was rent, but no importance was attached to the defects. Carlo Fontana was appointed architect in charge of the Basilica, and he wrote a book to give the world assurance of the safety of the building. But in spite of talk and type, the cracks became larger, and in 1742 the subject excited commotion in Rome, when a scientific commission was appointed. The following account of their inquiry was compiled by Cardinal Wiseman from the original reports, and is published as a "Bygone" by the kind permission of Messrs. Hurst & Blackett. We may add that the conclusions of the reverend scientists were generally accepted. Out of nineteen opinions which were obtained on the report, the majority agreed that the hooping was the best device. Giovanni Poleni was, however, summoned from Naples, and he expressed an opinion that the dome was not in danger. He attached no importance to the cracks, which he considered were partly the results of the enlargement of some of the piers, by which they sank more than others, and partly the results of hasty building. The variation of the drum from the perpendicular he ascribed to settlements, and not to the pressure of the superincumbent dome. But as Poleni advised the adoption of five circles of iron around the dome, it may be said that he came to the same conclusion as the mathematicians, who proposed six colossal hoops to give security to the cupola. A sixth was added, and there are now eight. The work was completed in 1747, and was carried out under the direction of Luigi Vanvitelli or Van Witel, the architect of the Caserta Palace, the Convent of Sant' Agostino, and other buildings in Italy. Each hoop consists of thirty pieces, and they are covered with brick in order to be preserved from rust.

There is a popular idea current, that Michel Angelo made the huge piers, on which the dome had to rest, so exactly proportioned to the weight they had to bear, that he even made a dying request that they should never be touched; that they were afterwards perforated to make some staircases and niches, and that the consequence was, that the whole dome was threatened with ruin. All this is incorrect, as I will show you just now. It is not likely that Michel Angelo, whose characteristic was massiveness to excess, would have so offended. But in addition, it deserves to be mentioned that, at the time when he built these piers, a commission was appointed, of which I believe Raffaele was a member, to examine them; and that their report was, that the piers should be still further strengthened. Immensely deep wells were accordingly sunk at their feet, and filled with Roman concrete—which is the strongest, I suppose, in the world—so as to give great additional support.

It will be useful to give you the exact dimensions, in English feet, of the great masses concerned in what I am about to speak of.

Piers, on which the dome rests, 282 round.

Cupola, diameter, 141½.

Circumference, about 423.

Height of arches, on which it rests, from the pavement, 146.

Height of lower edge of dome, 171½.

Total height to summit of lantern, 446½.

Perhaps the greatest promise ever made by art, and faithfully kept, was here. Michel Angelo is said to have declared that he would raise the Pantheon up into the skies. These dimensions show how he kept his word.

About 1681, it was observed that there were numerous cracks in various directions, through the cupola; and great

blame was thrown upon Bernini, who was accused of having made dangerous staircases and niches in the piers; however, his friend and biographer, Baldinucci, produced plans of earlier date, in which these alterations were marked; thus disproving that Bernini had been their author. He moreover speaks of the fissures then apparent as trifling. But they went on increasing. What are called in Italy seals—that is, marble dovetails, were placed across the cracks; and these broke, or were breaking with alarming rapidity. It was evident that the work of destruction was going on; and before the middle of the last century it was feared that, in a few years more, the whole dome of St. Peter's might fall in.

Architects came forward to suggest various remedies for the threatened evil. One wanted to block up the windows, another to make great spurs or buttresses, in addition to the columns that surround the cupola, to give it strength. In truth, the whole structure would have been disfigured by the proposed expedients; but in reality, it was difficult to find a remedy. Benedict XIV., a most able and learned man, was pope at the time. He wisely observed that this was not the business of art, but that belonged to science. So he named a special commission of three mathematicians—pure mathematicians, having nothing to do with building or architecture, to examine the case. When I mention their names, scientific persons will easily understand how they were selected.

At the head of the commission was Father Boscovich, a Jesuit, who had twice measured arcs of the meridian, and had published a number of works on astronomy, on the spots on the sun, on optics, and many other philosophical subjects; a man, in truth, of European reputation, and one of the first men in Italy who accepted the Newtonian system. The other two were not Jesuits, but religious of another order. They were the editors of what is commonly called the Jesuits' Edition of Newton, Le Sueur, and Jacquier; men purely and exclusively scientific. How did they go about their work? As scientific men would naturally do, with great care and caution, as well as ability.

As they drew up a minute report of their proceedings, under the modest title of "Opinion of Three Mathematicians," and presented it to the pope, I have only to abridge their own account of them. It was given in at the close of 1742; and they commence their paper by apologising for apparently intruding into a province not their own, and pleading for their excuse the sovereign command; showing, at the same time, how science has properly to deal with such a matter.

Their first care was to examine most minutely the entire dome, within and without, and form thus a plan of all the injuries which it had suffered. They give an accurate list of thirty-two distinct damages, some very severe, and running in various directions. The stone lintels over several of the windows were split in two. And when they applied a plumb-line to the buttress-pillars round the drum, or cylinder, of the dome, these proved to be as much as over an inch out of the perpendicular.

This naturally pointed to the over-pressure of the spheroidal portion, with the lantern above, upon the drum. But our three mathematicians were not satisfied with this simple deduction; they carefully examined the piers to which popular judgment attributed the damage; and they found that judgment to be erroneous. The piers were intact, and required no attention. They therefore advised that nothing should be done to them. Thus having formed the hypothesis of over-pressure, they proved that every phenomenon, to the slightest crack, fell into it, and was adequately explained by it, and by no other.

Their next step was to verify most exactly the reality of what they had theoretically ascertained, by weighing, on the one hand, the materials supported, and measuring, on the other, the sustaining power. I will not detain you with details, which are minutely given in the original memoir, but present to you the general results. Having exactly weighed measured portions of the materials used in the construction of this wonderful building—the stone, brick, copper, lead, and iron—and then, from accurate plans, and by sound calculations, having measured the quantity of each, they found that the entire dome, with its lantern, came to the frightful weight of 165,000,000 of Roman pounds, or 55,245 tons.

They obtain separately the weight of the gravitating portion; and then calculate the resistance or supporting powers. This consisted, first, in the drum (*tamburro*), with its pillars thrust already out of the perpendicular; and secondly, of an iron girder, too slight for its purpose, but so embedded in the wall that it could not be examined. They estimate, however, its tenacity, and take it into reckoning; but conjecture that it had either snapped or dilated, so as to be useless.

But they thus reached the awful result—that there was a balance of 5,000,000 pounds, or 1,674 tons, on the side of pressure against support. The conclusion of the mathematicians was, "that an irreparable ruin was reasonably to be apprehended, unless a timely and efficient remedy were applied."

We may well imagine the alarm of Rome, with its artistic



population, at such an announcement as this; and at hearing that this collapse and ruin had only been prevented so far by an iron collar round the base of the lantern, and by the peculiar construction which united the double dome to this, so as to prevent its falling out.

It is easier to find a defect, and prognosticate misfortune, than to remedy the one or to avert the other. But the commission to the three mathematicians was, not only to probe the evil, but also to suggest its "efficient cure," which they consequently proceeded to do.

Well, what sort of a remedy did they suggest? One entirely scientific, and not a little appalling. It was to put six more solid girders round this huge periphery of 420 feet. Each, of course, was to be divided into several sections, or arcs; and where these met, each had to branch into three; and these branches proceeding from the two arcs, were to be fastened by bolts passing through sockets in them; the bolts again being rivetted to chains passed round the building. A gigantic or Cyclopean undertaking; for you must remember that there were then and there no Nasmyth's hammers, or Birmingham rolling-mills; so that the enormous hoops had all to be forged and shaped by hand.

Of course, no sooner had this report appeared than it was assailed in all its parts—groundwork, deductions, and proposals. To vindicate it, and reply to the objections so gravely urged, and, at the same time, give an account of further proceedings in the matter, a second memoir was drawn up by the same learned men, early in the following year. A meeting of the general committee was then held, comprising architects, antiquarians, and others. A fresh examination was made; and finally the decision of the "three mathematicians" was adopted, and their proposal accepted.

There was no time to be lost, and no time *was* lost. Before the end of that year, 1743, two girders were braced round the drum. In 1744, three more were added. According to Poleni, their weight amounted to 119,044 Roman pounds, or 39 tons.

In 1747 it was found that the "mathematicians" had conjectured rightly, that the girder put in under Sixtus V. had sprung; and another was substituted for it. These iron circles are not visible, but are imbedded in the stonework.

We have here a notable instance of science coming to the succour, or rather to the rescue, of art, in one, certainly, of its most painful crises. One knows not which most to admire; the sagacity which at once recognised the power that was needed and called it in, or the free and unlimited scope given to its exercise, or the sensible acquiescence of the artistic commissioners, or the sound judgment of the scientific deputation, or, finally, the complete success of its remedy.

Without this all else, and a vast expense, would have been wasted. But the proposed cure fully answered; and now, after 120 years, no sign has been given of subsequent damage; but the seals, or dovetails, placed over the former fissures, left purposely open, are unbroken and unmoved.

### SAFETY AGAINST FIRE IN BUILDINGS.

A MEETING of the Insurance and Actuarial Society of Glasgow was held on the 8th inst., when Mr. A. B. Dansken read a paper on "Notes on Buildings."

Having given a short summary of the various Building Acts in this country and in America, Mr. Dansken said that the London and Liverpool Acts were the models for all others in England. In Scotland they had no Act really worthy of the name, the building regulations in the Glasgow Police Act consisting of only about 20 clauses. In Boston and Montreal, on the other hand, the Acts were of a more general nature than those in this country, though they contained some excellent provisions which might with advantage be adopted here. The Metropolitan Acts contained excellent structural arrangements. Liverpool had paid great attention to regulations for the storing of goods within the boundaries of the borough, while Montreal had special regulations for the erection and use of steam boilers, furnaces, stoves, and such like. Great improvement had recently taken place in the storing of goods, particularly in London and Liverpool, and what was required in Scotland was a general Building Act similar in its provisions to those of London and Liverpool. The most fruitful sources of fires in dwelling-house property were defective hearths and vents, and this was borne out by the fire returns of various cities. He found that in London out of 18,292 fires, 123 were from hearths and 1,643 from vents, a total of 1,766, or 9.65 per cent. of the whole; in Liverpool out of 4,070 fires 130 were from hearths and 370 from vents, or 12.28 per cent. of the whole; in Manchester out of 2,968 fires 644, or 21.69 per cent., were from hearths and vents; while in Glasgow out of 3,500 fires 228 arose from defective hearths, and 745 from vents, a total of 973, or 27.8 per cent. of the whole. The percentage in Glasgow was, therefore, three times greater than in London, more than

double that of Liverpool, and one-fourth more than Manchester. The reason of that was not far to seek, for the Metropolitan Building Act required that hearths "shall be solid for a thickness of seven inches at the least beneath the upper surface of such hearth or slab;" while in Glasgow not only were there no regulations as to hearths, but the practice was to lay them on the bare wood—the most dangerous that could be adopted. Considering how gables and party-walls were built in Glasgow, it was not surprising to learn that a great many fires occurred from defective chimneys. In the construction of dwelling-house floors Mr. Dansken referred to the present method of deafening by filling in between the joists a layer of ashes or rubbish on loose boards, and suggested that if the space between the joists was filled in with concrete the floor would be practically fireproof. A floor of that kind immediately above shops would confine a fire, or at least retard its progress very considerably, and render the dwelling-houses much safer. Were that system adopted in mansion-houses there would be fewer instances of their total destruction. Having given some hints as to how to deal with lightning-rods, Mr. Dansken proceeded to refer to warehouse and shop property. As the danger from fire increased proportionally with the size of the building, he thought some legal restrictions should be placed on their limits, for the extra rates charged for large warehouses had had little or no influence in that direction. Within recent years it had become the practice to have ceilings and walls of warehouses wood-lined. That very largely increased the risk of fire; but it might be remedied to some extent by having asbestos felt under the wood-lining of the ceilings and the space behind the lining of the walls, and filled up at intervals with belting of cement or plaster. Dealing with fireproof iron doors, Mr. Dansken referred to several varieties, but said that he preferred one formed of a combination of corrugated iron and asbestos. With respect to the mode of hinging them, he thought that where practicable the hinges should be bolted through the full thickness of the wall, and that the steps of the doors should be raised higher than the floor level on either side to prevent liquid flowing from one floor to another. Mr. Dansken concluded by referring to different forms of floors suitable for public buildings, in which a combination of iron and concrete was treated in various ways.

### EXAMINATION OF RIVETTED GIRDERS.\*

THE rivet, more than any or all other forms of fastening, is used in connecting the parts of iron or steel structures, and it is doubtful if anything will ever be devised to take its place. Nevertheless, as at present used, it is subject to certain disadvantages and accidents of workmanship, which it is the business of the inspector to detect, and of the engineer to remedy or to prevent.

Perhaps the most important of these drawbacks is the liability of rivets to looseness. The object of almost all the rivets in an engineering structure is to carry transverse shear. To be convinced of this fact, if conviction be needed, one has but to consider the relations which the parts of a built member bear to one another, and the fact that rivets joining them are driven at right angles to the principal lines of stress.

Now, if a rivet be loose, *i.e.*, if its shank be separated, by any appreciable space whatever from the sides of the hole which it is supposed to fill, it is evident that it can take up, from the pieces which it connects, none of the shear intended for it, and that its hole might as well be empty. To detect this looseness in rivets, so as to have the matter corrected, is part of the inspector's duty. But as in other cases, so in this, prevention is far better than cure; and if means can be found to insure the tightness of rivets in the first place, the results will be far superior to those produced by any amount of cutting out and replacing. If, therefore, the experience of any number of inspectors or observers shall aid in discovering the causes or conditions of looseness, so that these may be removed, much will have been effected.

It is impossible, however, to lay down any infallible rules as to the parts of iron or steel structures where most loose rivets are to be found. I do not know of many other cases where it may be more truly said that "exceptions are the rule;" and therefore, while I think that the few general statements I shall make below will prove true in the long run, they may very possibly be false guides in any given case, and are only to be taken as expressions of the average of results.

1. Hand-driven rivets are more apt to be loose than those driven by power, and are more irregularly loose. That is to say, supposing an equal number of rivets to be loose in each of two members, one power and the other hand-rivetted, the loose rivets in the former are likely (if numerous) to occur in groups and series; while, in the latter, they will probably be scattered, without any regularity, over the member.

\* From a paper by Mr. James Sanderson in the Transactions of the Engineering Society of the University of Michigan.



2. Counter-sunk rivets are more apt to be loose than those with ordinary round heads. Whether rivets counter-sunk on both sides are more frequently loose than those with one full head, I am unable to say, as it is generally impossible to test double-counter sunk rivets for lateral looseness. However, such rivets will frequently move longitudinally in the hole, which is not true of the most full-headed rivets.

3. Rivets connecting thick plates or pieces of metal are more likely to be loose than those in lighter work.

4. Rivets holding lattice-bars or light cover-plates to flanges of channels, &c., are very seldom loose. If, however, a rivet passes through two or more thicknesses of metal besides lattice-bar or bars, or a cover-plate, its liability to looseness is increased in proportion to the extra thickness of metal passed through.

5. Pin-plates and other reinforcing plates, especially when fastened by staggered rivets close together, are likely to have some loose ones. In general, the closer the rivets together the more apt are some of them to be loose. In long, regularly spaced rows, the rivets are less apt to be loose than when crowded or bunched.

6. In rows of rivets, those at or near the ends are most apt to be loose. When the end rivet of the row is tight, a loose one may frequently be found second or third from the end.

7. Other circumstances increasing the liability to looseness will suggest themselves. For example, when rivets have to be cut out, and others driven to replace them, the shock of the cutting and re-driving is very apt to loosen rivets, previously tight, in their neighbourhood. This makes a loose rivet a spreading evil, and one which is peculiarly difficult to remedy. Again, it will readily be seen that, in hand-rivetting any rivet, either of whose heads is hard to get at for the purpose of holding, or heading up, is likely to prove loose. Also, that it is difficult to make a tight rivet at or very near the angle of a bent piece, or at any point where it is not easy to bring the parts together. This, too, is evident, that a rivet, in order to be tight, should fit the hole as closely as possible before driving, and should be long enough to admit of being well headed up when in the hole. A small, half-formed head is a frequent accompaniment of a loose shank.

8. I have not found that rivets holding together a large number of moderately thick plates, are especially apt to seem loose under the hammer. I doubt, however, if such rivets actually fill the holes. I suspect that a section of such a rivet would show it to be bent in the hole, and so held apparently tight, while not actually so.

9. It stands to reason that a fairly punched and reamed hole is more apt to contain a tight rivet than is an irregular one; but I do not think, from my experience so far, that drilled holes (like those generally used in steel-work) will prevent loose rivets, or even greatly diminish their number. This, of course, is not the primary object of drilling the holes in steel, but I supposed, at one time, that a great diminution in the proportion of loose rivets to tight ones would be one of the results of the process; and in this expectation I have been somewhat disappointed. This much may be said, however, that in a rough hole a slight looseness may not be detected, as a rivet may be jammed, so to speak, between projecting points; while in a smooth drilled hole the slightest space between the rivet and the surrounding metal will cause motion under the hammer.

10. After all endeavours to account in some systematic manner for the looseness of rivets, there is left a large margin of irregularity, and absolutely nothing can be said with certainty as to the rivets in a particular piece of work until they have been tested. Out of ten similar pieces, similarly rivetted to all appearance, nine may show only one or two loose rivets each, while the tenth may look, after testing and marking, like a constellation of chalk circles. And even then it cannot be said that all the loose rivets have been found, but only that none more are known to exist.

11. For the detection of loose rivets, the only method I know of is to strike each rivet with a hammer. In my experience, the motion indicating looseness is more reliably ascertained by touch than by sight or sound. As to the precise manner of testing, it will of course vary with individuals. My own method has been somewhat as follows. I strike a couple of blows with the hammer on each side of the rivet-head, placing the finger at the same time on the opposite side of the head, and in contact with the surface of the plate or piece rivetted, so as to feel the motion, if any, between the rivet-head and the solid metal. The motion is much more readily felt by touching the head which is struck than by holding the opposite head of the rivet, as is sometimes done. Looseness is also more readily detected by striking the original head of the rivet than by striking the head which is made in rivetting.

In inspecting rivets countersunk on both sides, the only possible test is obtained by striking directly on the head of the rivet, at the same time placing the fingers on the opposite head to detect longitudinal motion. This should be done, if possible, from both sides of the part rivetted.

A light hammer, about one or one and a half pounds, is preferable to a heavy one. The blows struck should not be too strong, but such as may be struck freely from the wrist.



#### Kaolin and Granite.

SIR,—I am not surprised at your correspondent "Petrus" adducing the opinion of such a man as Mr. Robert Hunt, F.R.S., for comparison with Professor Newberry's. The Hunt species of writers somehow can gain credence while men who have devoted themselves to special subjects are ignored. It has been my aim to quote passages which expressed the experience or thought of writers, in and out of England, who have a claim to be recognised as authorities. Workmen are preferable to keepers of records—so, while occasionally I make notes of what the former say, I ignore the latter. The "Tesseræ" are a collection of passages selected on the principle that the most useful books for business are those compiled by oneself. I have heard nothing of Mr. Hunt that would warrant my becoming indebted to him. He was, I believe, a tabulator, registrar, storekeeper, clerk, or something of that kind in the Office of Mines, and in his time may have consumed miles of red tape in tying-up documents. He did dabble in science—or, as he called it, "The Poetry of Science"—as a book-maker, and if reference will be made to the *Westminster Review* for April 1855, the estimation in which his peculiar sort of science was held by practical scientists will be evident. There the author is described as having "a mind disqualified by nature or by habit from pursuing aright the simplest physical inquiry."

Mr. Hunt, in the extract published last week, professed his readiness to prove that china clay never was true granite. But in the "Dictionary of Terms" which he edited there is not a sign of this bravado. Porcelain clay is in that book said to be "a substance of great infusibility, supposed by some geologists to have been derived from feldspar which has undergone decomposition." Not a word is given to suggest any other source than feldspar, and I think it may be doubted whether Mr. Hunt had made up his mind on the subject. Nor does it matter much what theory he upheld.

There may be contrary opinions on the nature of kaolin, or, as the Germans call it, porcelain earth; but I must say that, if we judge by the value of the authorities, we cannot help believing in the relation between kaolin and feldspar and granite. In my commonplace book I am unable to find any reference to an expert of standing whose views agree with those of "Petrus." It is a question which I have had to consider before now, and that was my conclusion. With your permission, I will cite a few of those authorities.

The late Professor Jukes—who was the most thorough field geologist I have had the fortune to meet, and had studied granitic phenomena in many parts of the world—says:—"Perfectly pure clay is an hydrated silicate of alumina. This is the substance known as kaolin or porcelain clay derived from the decomposition of orthoclase, albite, or other feldspars, from which the silicates of potash, soda, &c., have been washed out. In some granitic districts the granite being decomposed yields this substance, which is carried down by water, and deposited in hollows, the quartz and mica being often left behind in the state of loose sand." On any question relating to petrology there is no geologist worthy to take precedence of Professor Jukes. He is supported by Sir Charles Lyell, who says:—"The purest clay found in nature is porcelain clay or kaolin, which results from the decomposition of a rock composed of feldspar and quartz, and it is almost always mixed with quartz." Mr. Etheridge, the palæontologist at Jermyn Street (to whom, in common with most students of geology in England, I have been indebted), said, in a lecture which he delivered in the Bristol Mining School:—"The valuable clay known as kaolin or china clay is derived from the decomposed feldspar of certain feldspathic granites, chiefly those of Cornwall and Devon, which easily decompose when exposed to the weather, producing in this condition the unctuous white clay used in the manufacture of the finest porcelain." These extracts will suggest how men who are entitled to be considered as geologists think of the matter, and it is absurd to put the notions of a geologist's clerk into opposition with what is held by them.

The chemists are no less unanimous than the geologists. I can only venture to quote one—who is a host in himself on all questions relating to technology. Professor Sullivan says:—"True china consists of an infusible, very plastic, white clay, called kaolin, and an infusible, but not plastic material, termed by the Chinese *pet-un-tse*, and in English usually called flux. Kaolin is simply a clay derived from the decomposition of the feldspar element of granite; the flux



being, on the contrary, a less decomposed feldspathic mineral, containing a large amount of intermingled grains of quartz, to which is added some chalk and gypsum: even unaltered feldspar may be used for the same purpose." A. Jacquemart is nearly identical in his description of the clays.

I need hardly say that feldspar is no more than a general name for a variety of minerals which are found in connection with igneous rocks and schists. They differ in their origin and chemical constituents. Common pumice-stone and the treasured moonstone, the beautiful aventurine and the valueless ice-spar, with many other stones, come under the title feldspar. It forms a part of soils and clays, whence the German name field-spar or spath. Some mineralogists say that kaolin is that kind of feldspar called orthoclase in a decomposed condition; some give it a different name, for one of the troubles of mineralogy is the learning and unlearning of so many names for the same thing. M. Arnoux, the director at Minton's, calls it pegmatite. "We may have," he says, "no kaolin or pegmatite; then we are obliged to extract the kaolin which has been formed by the decomposition of some granite rocks, and in England we find it easily in washing the decomposed Cornish stone."

It seems like breaking a fly on the wheel to take so much trouble to demolish an absurdity—for what else is the "true granite" of Mr. R. Hunt, F.R.S., &c.? But there is so much "information" of the kind prevalent that time may not be lost in endeavouring to show its character. It was with the hope of substituting something more deserving of the name that I was induced to present "Tesseræ" to the public.

The "absolute durability" of granite, of which "Petrus" speaks, cannot be taken without qualification. If carefully selected and properly used, granite (especially granite which is not tending towards kaolin) is undoubtedly a stone which endures. But I have lived too long in a granite district not to have observed its limitations as a building stone. It cannot be called a good, all-round stone, when there is so much uncertainty about the future of arisies and mouldings. Bold, semi-circular mouldings are effective, but there is a limit to their use. Simple balustrading would not appear to be tempting to the evil agencies in the atmosphere, yet I have seen granite in that form mouldering into the strangest shapes. Polishing seals the surface and prevents decomposition. The drawback is that it can be only partially used if we want architectural effect. It might be possible to make granite equally impervious without the polish.—Yours obediently,

THE COMPILER OF "TESSERÆ."

## CHURCH BUILDING AND RESTORATION.

**Horwich.**—Plans have just been prepared by Mr. Thomas E. Smith, architect, Wood Street, Bolton, for a new school-church for the Roman Catholics of Horwich, in the stead of the small building now used in Gorton Fold. The style to be adopted is plain Gothic, and the new building will be of red brick, with stone and blue brick dressings. It is estimated that accommodation will be provided for 350 persons.

**Tilehurst.**—The dedication-stone of the church of St. George has been laid. The church, which is to replace the present temporary iron structure, is of Early English style, built of brick, with stone facings, and will at present consist of only a nave and one aisle, accommodating 375 persons. The architect is Mr. S. Gambier Parry, of South Kensington, and the contractor Mr. J. Partlo, Tilehurst.

**Bolton.**—The Wesleyan Chapel, Bridge Street, Bolton, erected in 1803, has undergone a thorough renovation, the interior having been entirely renewed. New floors have been put in, the ground floor raised, and the gallery lowered. A vestibule has been formed at the front, and three entrance doors opening into same, a central door having been formed to be used in cold weather for inlet only, to prevent cold draughts. The old chancel has been added to minister's vestry. Mr. T. Ormrod, of Bolton, is the architect, and Mr. W. Tounson, of Bolton, the contractor for the principal work. The total expenditure will be about 3,500*l.*

## NEW BUILDINGS.

**Edinburgh Industrial Schools.**—The directors of the Edinburgh Industrial Schools have decided to combine their schools and dormitories in one large building, the plans for which, by Mr. Sydney Mitchell, have now been completed and approved. Within the building are provided houses for the superintendent and for the assistant superintendent. To the right of the principal entrance are the two school-rooms, communicating with the court by a door having a porch, and also communicating with a wide and well-lighted corridor, which runs across the building. Close to the principal entrance are a waiting-room and the superintendent's office. Further along the corridor are the matron's room, sewing-room, and

cutting-room. In a projection or wing, which is reached from the corridor by a passage between the matron's room and the sewing-room, is the sick-room. Beyond the sewing-room are the dining-room of the officials and the cook's room, and in a wing is the general dining-hall for the boys, which is directly connected with the kitchen, so as to facilitate the serving of food. The play-room is situated in a wing projecting into the court, and is entered from the centre of the corridor. At either end of the corridor are the lavatories, separated from it by glazed arcades. The workshops, boiler-house, laundry offices, coal and wood stores, &c., are all ranged round a spacious court, and are in every respect completely equipped. The first floor contains six dormitories, two for 35 boys, giving 600 cubic feet to each; two for 31 boys, giving 600 cubic feet to each; and two for 9 boys, giving 550 cubic feet to each. The boys' bath-rooms are placed close to the dormitories, but care is taken to prevent steam passing from them into the dormitories. An infectious diseases hospital is provided. The dining-hall, school-room, play-room, dormitories, lavatories, and corridors are warmed by hot water, and the sick-room and infectious diseases hospital are warmed by open fires. Cross ventilation through windows has been provided for in the dining-hall, school-rooms, play-rooms, dormitories, sick-room, and infectious diseases hospital.

## GENERAL.

**The National Gallery** has been enriched by the addition of fourteen new pictures. It receives this generous gift under the will of the late Mrs. Elizabeth Vaughan.

**M. Lockroy**, having declined the office of Under Secretary for Fine Arts in the French Ministry, the appointment has been accepted by M. Edmund Turquet.

**The Incorporated Society of British Artists** have elected Mr. T. C. Gotch and Mr. James S. Hill as members.

**Mr. James Jackson**, of Wyvenhoe Hall, has accepted the office of treasurer to the proposed School of Art for Colchester.

**An Art Treasures Museum** is proposed to be formed for Folkestone, and steps are being taken for holding an art exhibition.

**An Industrial and Fine Arts Exhibition** has been opened at Bath. It will remain open for a month.

**M. Laureys**, the professor of architecture, in Brussels, has been nominated a chevalier of the Order of Leopold.

**A Statue** of the late Lord O'Hagan is to be erected in a suitable place in Dublin. The sculptor has not yet been selected.

**A Public Hall** has been erected in Hatfield by the Marquis of Salisbury. It is in the Queen Anne style, of red brick, with moulded terra-cotta ornaments. A portion has been fitted up as a restaurant, while another part is a Conservative club. There are two reading rooms and a billiard room, with a hall for entertainments. The building cost 2,000*l.*, and has been built from plans by Mr. S. W. Shillito, of Hatfield.

**The Annual Exhibition of Ecclesiastical Art**, in connection with the Church Congress, will be held this year in the Esplanade Hotel, Southsea.

**A Committee** is being formed in Berlin for organising an exhibition of national industry, which it is proposed to hold in 1888, in a building to be erected in the plains beyond the Treplow Park.

**Mr. J. J. O'Callaghan** has offered a prize of 5*l.* to the carver of the best panel and capital, which will be sent to the Artisans' Exhibition, Dublin.

**Messrs. Smith & Brodric**, of Hull, have been successful in the competition for the new dispensary and cottage hospital at Beverley.

**The new Hotel de Ville**, in Zurich, has been completed. Although the utmost simplicity characterises the design the work has cost 350,000 francs. A new system of heating has been introduced from which much is anticipated. The inventors are MM. Bechum and Post, of Westphalia.

**A Meeting** of the Association of Municipal and Sanitary Engineers and Surveyors will be held at Burnley on April 25.

**The Essex Archæological Society** have decided to conduct a systematic and thorough excavation of the Roman villa at Alresford.

**The Contractors for the Lochty Waterworks** on Tuesday put in a claim, before the St. Andrew's Commissioners of Police, for compensation for the abandonment of the works, amounting to 4,220*l.* 15*s.* 2*d.*

**Eight Dwellings** in course of construction in Sixty-second Street, New York, being insecurely put together, fell on Monday while efforts were being made to strengthen their foundations. Twenty-four workmen were overwhelmed in the ruins. Rescuing parties laboured through the night, and succeeded in bringing out twenty men, all of whom were injured.

**Messrs. Eck, Callow & Co.**, electric engineers, have removed from Dean Street, Holborn, to Prudential Works, Greville Street, at the rear of the Prudential Life Assurance Company.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, APRIL 18, 1885.

## COUNTY SURVEYOR.

AT the meeting of the Suffolk County Magistrates on Tuesday at Bury St. Edmunds, with reference to the duties and salary of the county surveyor proposed to be appointed, the Finance Committee recommended that the surveyor be required to superintend all county bridges and approaches repairable by the county, to inspect county buildings and bridges once a year, to prepare plans and estimates for buildings and repairs, and to discharge the ordinary duties of a surveyor. The committee recommend that the salary be 120*l.* per annum, including traveling expenses, and an allowance of four per cent. upon any outlay exceeding 500*l.* on the whole sum expended in any particular case, where plans are prepared and the work superintended by him under the direction of the Court. The committee also suggested that the Court empower them to advertise for candidates. The report of the committee was adopted, it having been stated that many of the bridges had got into a bad state for the want of a surveyor.

## ABERDEEN BREAKWATER.

THE harbour engineer, after visiting the sea works at Newcastle, Sunderland, and Dublin, has made a report regarding the maintenance of the South Breakwater, and describing the means that had been successfully used at the ports he had visited to protect the piers from the action of the sea. To protect the South Breakwater, he proposed to level the foundation in front of the hole at the middle of the breakwater with a diving-bell to a level of 7 feet below low water of spring tides, to deposit a block of about 250 tons weight to form a head to the apron, and to deposit several smaller blocks on the landward side to complete the apron. The large block would be formed in the graving dock and floated by a barge to its site at the breakwater. It would be made hollow, the sea face lined with granite ashlar, and the inner sides and bottom built of brick in Portland cement, the interior to be filled with concrete, composed of heavy materials, after its deposit. He estimated the cost of the proposed blocks at 650*l.* The question of calling in a consulting engineer is under consideration.

## CANADIAN PACIFIC RAILWAY.

AN interesting diagram has been issued by the Canadian Government, illustrating the progress made with the construction of the Canadian Pacific Railway up to January 31 last. It shows the portion of the line graded, the miles of track laid, and the total distance completed on that date. Since then considerable progress has been made; only about forty miles remain to be completed on the section to the north of Lake Superior, and the work in the Rocky Mountains is so far advanced that it is expected that the railway will be in operation from Montreal to the Pacific coast in the

coming autumn. The rapid construction of the railway has proved very useful to the Government in connection with the disturbances in the North-West Territories, and will be an important factor in the prompt suppression of the outbreak. Troops have been conveyed over the line from Eastern Canada to Qu'Appelle, 320 miles west of Winnipeg. The railway, especially when finished to British Columbia, will be of considerable importance to the Empire, apart altogether from the effect it must have upon the commercial and agricultural development of the Dominion.

## BURGLAR AND FIRE ALARM.

AT the meeting of the Royal Scottish Society of Arts, on Monday, Mr. Wilkins, fire-master, Edinburgh, read a paper on "A Burglar and Fire Alarm." The communication, he said, was divided into three parts—(1) on an apparatus which would convey an alarm of burglary or fire to the inmates of any building where the apparatus might be fitted up, to the constable on the beat, and to the public in the locality; (2) on an apparatus which, if connected to street fire alarms, would have a tendency to prevent malicious persons tampering with them and giving false alarms; and (3) on the construction of the alarm. The alarm, he said, would consist of one or more bells, supported on a metal bracket—one bell being placed on each side, and the other in the centre immediately above. The hammer for striking each bell would be attached to steel levers, and kept in position by means of metal forked eyes, jointed in such a manner as to allow them to move upwards and downwards when put in motion. A revolving shaft would insure a separate ringing of the bells, and the alarm would be fastened upon a metal plate or wooden board, to which might be attached one or more cannons or pistols for making a loud report. The alarm might be attached to and worked in conjunction with the street fire alarm, so that the alarm would be communicated to the building and the fire station simultaneously. If the system recommended were adopted, it would give an alarm to the constables and the public which could be heard on a quiet night half a mile away. The alarm could be connected to windows and doors, and could be regulated so as to ring for a number of minutes, and, in the event of fire breaking out and burning the cord, the alarm would instantly be set in motion.

## THE TIMBER TRADE.

THE evidence of Mr. Wylie, an accountant in the compensation case of Messrs. Sommerville & Co., of Greenock, against the South-Western Railway Company, indicates the condition of the timber trade for ten years. Mr. Wylie said that he had gone over Messrs. Sommerville's books, and distinguished what the gains and losses were in the buying, selling, and sawing of timber from the year 1875 to 1884.

In 1875 there was a loss of 4,045*l.* 10*s.* 7*d.* on timber, and a gain on sawmilling of 4,471*l.* 6*s.* 3*d.*, giving a net profit for the year of 425*l.* 15*s.* 8*d.* In 1876 there was a profit on timber of 1,050*l.* 13*s.* 11*d.*, and on sawmilling of 2,331*l.* 5*s.* 6*d.*, making a net profit of 3,381*l.* 19*s.* 5*d.* In 1877 there was a loss on timber of 179*l.* 7*s.* 9*d.*, and a profit on sawmilling of 1,925*l.* 3*s.* 11*d.*, or a net profit of 1,746*l.* 2*s.* 11*d.* In 1878 there was a loss on timber of 4,661*l.* 7*s.*, and a gain on sawmilling of 249*l.* 1*s.* 9*d.*, or a net loss of 4,411*l.* 7*s.* 10*d.* In 1879 the loss on timber was 7,069*l.* 7*s.* 11*d.*, and on sawmilling a profit of 1,067*l.* 16*s.* 5*d.*, giving a net loss of 6,062*l.* 11*s.* 6*d.* In 1880 there was a profit on timber of 11,704*l.* 7*s.* 1*d.*, and a profit on sawmilling of 1,111*l.* 5*s.* 9*d.*, or a net profit of 12,815*l.* 12*s.* 10*d.* In 1881 there was a profit on timber of 4,363*l.* 17*s.*, and on sawmilling 1,146*l.* 5*s.* 11*d.*, or a net profit of 5,510*l.* 2*s.* 11*d.* In 1882 there was a profit on timber of 1,050*l.* 4*s.* 3*d.*, and on sawmilling 638*l.* 5*s.* 8*d.*, or a net profit of 1,687*l.* 9*s.* 11*d.* In 1883 there was a loss on timber of 1,067*l.* 15*s.* 11*d.*, and a profit on sawmilling of 1,862*l.* 7*s.* 8*d.*, showing a net profit of 794*l.* 11*s.* 9*d.* In 1884 there was a loss on timber of 902*l.* 4*s.* 11*d.*, and a profit on sawmilling of 292*l.* 6*s.* 8*d.*, making a net loss of 609*l.* 18*s.* 3*d.* For the ten years ending 1882 he found an average combined profit of 2,652*l.* 12*s.* 2*d.*; and for seven years ending 1882 he found an average combined profit of 2,238*l.* 6*s.* 10*d.*

## DISPOSAL OF REFUSE.

ON Wednesday evening, two papers dealing with the disposal of sewage and town refuse were read at the Society of Arts. The first, by Dr. Thomas Hawksley, related to the abolition of water carriage in the removal of effete organic matter from towns. The second paper, read by Dr. B. W. Richardson, had reference to the removal of refuse independently of sewage. This he comprised under the heads of house refuse, trade refuse, market refuse, street sweepings, condemned food, slaughter-house offal, and stable refuse; and, quoting the authority of Colonel Haywood, Engineer to the City of London, he said that refuse in the City, under the first four heads, alone amounted to about 61,230 cartloads per annum. The more rapidly the refuse was removed the better for the health of the community, and it appeared that in towns where there was quick removal there was less disease—a fact which showed that these agencies had an effect, indirect at all events, upon health. Everything connected with this removal, except perhaps in the City, was exceedingly bad in London and most large towns; but this should not be the case, seeing that a profit arose from it. The means adopted for removing house and trade refuse in the City might be taken as an example for other towns in England; but in the case of seaside places he recommended a system of floating barges such as those in use on the Tyne. He condemned the common system of contracts, and insisted that the parish authorities should themselves undertake the removal of refuse.



## COMPETITIONS OPEN.

**BOOTLE.**—May 1.—Plans and Specifications are invited for the proposed Erection of Public Baths. Mr. J. Alexander, Borough Surveyor Bootle.

**WHITCHURCH.**—May 9.—Designs are requested for a Small Cottage Hospital. Major Lee, Whitchurch.

## CONTRACTS OPEN.

**ACTON.**—April 22.—For Building Houses and Stabling, South Acton Estate. Mr. C. Nicholson Lailey, C.E., Surveyor, Ellesmere, Uxbridge Road, Acton, W.

**ATHERSTONE.**—April 20.—For Alterations, Rectory, &c., Congregational Church. Messrs. Ingall & Hughes, Architects, Temple Row West, Birmingham.

**AUCHMILL.**—April 18.—For Alterations to Noel House. Mr. W. Davidson, Architect, Ellon.

**BALTINGLASS.**—April 28.—For Building Dispensary, Residence, &c., at Rathvilly. Mr. H. R. Newton, C.E., 202 Great Brunswick Street, Dublin.

**BANBURY.**—April 21.—For Building Warehouse at the back of Central Premises of Co-operative Society, Broad Street, Banbury.

**BATLEY.**—April 23.—For Enlargement of Blenheim House. Mr. W. Hanstock, Architect, Branch Road, Batley.

**BATLEY CARE.**—April 20.—For Building House and Shop. Mr. J. T. Law, Architect, 64 Commercial Street, Batley.

**BELFAST.**—April 25.—For Building Shops and Dwelling-houses. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

**BELMONT.**—For Building Six Small Houses. Messrs. E. S. & H. Boosey, Architects, 3 Langham Place, Regent Street, W.

**BIRKENHEAD.**—April 20.—For Building Foundations for Band Stand in Park. Mr. T. C. Thornburn, C.E., Borough Surveyor, 35 and 36 Hamilton Square, Birkenhead.

**BIRMINGHAM.**—April 20.—For Laying Wood Paving (5,000 to 6,000 square yards) in Corporation Street. Mr. Wm. Till, Borough Surveyor, Council House, Birmingham.

**BLAINA.**—April 27.—For Building English Congregational Chapel and Schoolroom attached. Mr. J. Thomas, Architect, Glannant, West Cross, Swansea.

**BOGTHORN.**—April 18.—For Rebuilding Two Dwelling-houses. Mr. John Judson, Architect, Bogthorn, near Keighley.

**BOLDON COLLIERY.**—For Building Christian Lay Church. Mr. J. Shields, Architect, Blackett's Buildings, Sunderland.

**BURNLEY.**—May 13.—For Erection of Municipal Buildings, Police Courts, and Public Baths. Mr. H. Holtom, Architect, Bond Street, Dewsbury.

**BURTON-ON-TRENT.**—April 21.—For Construction of Earthenware Sewer (600 yards). Mr. E. Clavey, Borough Surveyor, Municipal Offices, Horninglow Street, Burton-on-Trent.

**CARLISLE.**—April 21.—For Building Boundary Wall, Entrance Gateway, &c., Roadway Bridge, and Abutments for Footbridges, Diversion of Fairy Beck, &c. Mr. Isaac Cartmell, Clerk to the Burial Board, Town Hall, Carlisle.

**CHELSEA.**—For Pulling Down Three Houses and Shops and Clearing Site. Apply, 177 Fulham Road.

**CHELSEA.**—April 23.—For Repaving the Carriageway and Portions of Footways of the Suspension Bridge. The Engineer of the Metropolitan Board of Works, Spring Gardens, S.W.

**CHESTHILL.**—April 20.—For Additions and Alterations to Invervar Lodge and Steading. Mr. John Hamilton, Chesthill, Fortingal, N.B.

**CHIPPENHAM.**—April 24.—For Building Mission Chapel, Lowden. Rev. Canon Rich, The Vicarage, Chippenham.

**CLAPHAM.**—April 21.—For Roads and Sewers, Chatto's Estate. Mr. W. Newton Dunn, Surveyor, 1 and 2 Bucklersbury, E.C.

**CLAYTON HEIGHTS.**—April 25.—For Building Villa Residence, Stabling, and Out-offices. Mr. John Drake, Architect, Winterbank, Queensbury.

**CORK.**—April 22.—For Construction of a Timber Wharf (265 feet long) at Penrose Quay. The Engineer, 10 Lapp's Quay, Cork.

**COVENTRY.**—April 27.—For Laying Sewer, Leicester Road. Mr. E. J. Purnell, C.E., City Surveyor, St. Mary's Hall, Coventry.

**DERBY.**—April 24.—For Extensive Additions and Alterations to the Railway Servants' Orphanage Buildings, Ashbourne Road. Mr. Thomas Hall, Secretary, Railway Servants' Orphanage, Ashbourne Road, Derby.

**DOVER.**—April 28.—For Alteration and Extension of Outfall Sewer. Mr. E. Wollaston Knock, Town Clerk, Castle Hill House, Dover.

**EASTINGTON.**—April 22.—For Works at Parish Church. Messrs. Waller, Son & Wood, Architects, 17 College Green, Gloucester.

**EGGINGTON.**—April 21.—For Building Ten Cottages on Corporation Sewage Farm. Mr. E. Clavey, Borough Surveyor, Municipal Offices, Burton-on-Trent.

**ELLAND.**—April 21.—For Building Two Dwelling-houses, Catherine Street. Mr. F. Briers, Mexbro' Arms Hotel, Westgate, Elland.

**ELTHAM.**—April 29.—For Construction of Sewers. Plans at the Surveyor's Office, Eltham, Kent.

**FENTON.**—April 28.—For Supply of 36-inch Station Governor, with Inlet, Outlet, Valves, and Connections. Mr. James Stelfox, Engineer, Gasworks, Manager, Belfast.

**GARFORTH.**—April 18.—For Cleaning and Decorating Wesleyan Chapel. Messrs. Morley & Woodhouse, Architects, 16 Darley Street, Bradford.

**GLASGOW.**—April 20.—For Additions and Alterations to Buildings at Moore Street Slaughter-houses. The City Architect, 74 Hutcheson Street, Glasgow.

Established 1820.]

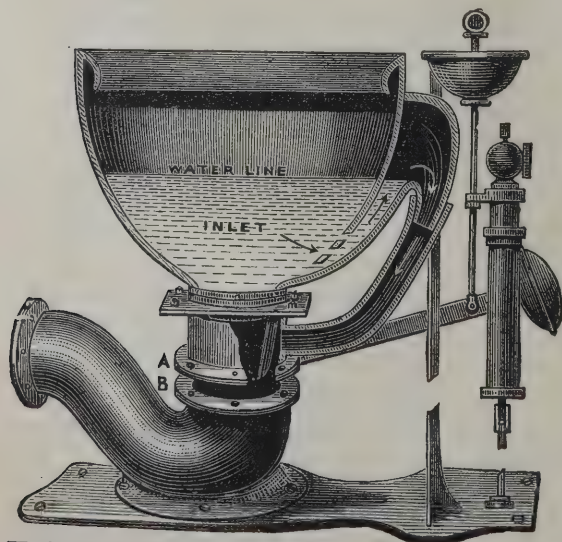
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3 Silver and 4 Bronze Medals

HENRY CONOLLY.

LIMITED,  
MANUFACTURING SANITARY ENGINEERS,

Call the attention of Architects, Surveyors, and Builders to their Closets, the advantages of which will be readily seen by the accompanying Illustration.



THE "SAFETY" VALVE WATER-CLOSET,

WITH

Conolly's Reversible Trap (Patent No. 3,754).

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weepin pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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WAREHOUSES—TOLMERS SQUARE, N.W.

[Telephone No. 3,525.]

EXHIBITION, 1884.

Awarded for Sanitary Appliances.



**GREENOCK.**—April 27.—For Supply of Two Sample Hydraulic Travelling Cranes (3 tons and 1½ ton), &c. Mr. W. R. Kinipple, C.E., 17 West Blackhall Street, Greenock.

**HALIFAX.**—May 1.—For Building Eight Dwelling-houses. Messrs. Geo. Buckley & Son, Architects, Waterhouse Street, Halifax.

**HASLINGDEN.**—April 20.—For Formation of Circular Reservoir. Mr. T. Woodcock, Clerk to the Guardians, West View, Haslingden.

**HASTINGS.**—April 25.—For Building Row of Shops, with Mansions above. Drawings, &c., at Lonsdale Chambers, 27 Chancery Lane, London. Mr. Arthur Wells, Architect, 25 Havelock Road, Hastings.

**HYDE.**—May 5.—For Alterations to Station. Plans at the Engineer's Office, 28 London Road, Manchester.

**IPSWICH.**—April 21.—For Building Shops and Offices. Mr. Wm. Eade, Architect, Post-office Chambers, Ipswich.

**ISLINGTON.**—April 23.—For Boundary Wall and Additions to similar Walls at Workhouse School, Hornsey Road. Mr. Wm. Smith, Architect, 1 Gresham Buildings, E.C.

**JARROW.**—April 25.—For Building Board School. Mr. J. H. Morton, Architect, South Shields.

**LANCASTER.**—April 22.—For Additional Farm Buildings at the Royal Albert Asylum. Mr. James Diggins, Secretary, Royal Albert Asylum, Lancaster.

**LICHFIELD.**—April 18.—For Building House. Names to Mr. G. Haynes, Walsall Road, Lichfield.

**LIMERICK.**—May 4.—For Works for Cashen River Drainage District. Mr. W. Barrington, jun., C.E., Clare Chambers, 10 George Street, Limerick.

**LUGWARDINE.**—April 25.—For Building Vicarage. Mr. T. Nicholson, Architect, Hereford.

**MALAHIDE.**—April 22.—For Building Coast-guard Station. Mr. W. B. Soady, Office of Public Works, Dublin.

**MAESTEG.**—For Building Cottages. Mr. T. Williams, Tabor Terrace, Abergwynfi, Maesteg.

**MARYPORT.**—April 25.—For Building Primitive Methodist Chapel at Crosby Villa. Mr. H. Thompson, Dearham Row, Dearham, Carlisle.

**MIDDLETON.**—For Building Three Vestries for Wesleyan Sunday School. Mr. G. Eddison, Architect, 59 Ladytill Lane, Beeston Hill, Leeds.

**MORLEY.**—April 24.—For Building Villa, Victoria Road. Mr. T. A. Buttery, Architect, Paragon Buildings, Queen Street, Morley.

**NELSON.**—May 2.—For Building Eight Houses, with Garden and Retaining Wall. Messrs. T. Fryer & Co., Nelson.

**NEWBURY.**—April 20.—For Building District Hospital. Mr. H. G. Turner, Architect, 1 Great James Street, Bedford Row, W.C.

**NEWMARKET.**—April 25.—For Additions and Alterations to Palace House. Mr. W. C. Manning, Newmarket.

**NEWPORT.**—April 29.—For Construction and Erection of Six Purifiers (20 feet square), with Centre and other Valves, and Travelling Lifts, for Gasworks, Crindau. The Engineer, Gas Offices, Mill Street, Newport, Mon.

**OBAN.**—April 20.—For Reconstruction of Ardour Pier (concrete and timber work). Mr. G. Woulfe Brennan, C.E., Argyll Square, Oban.

**OLDHAM.**—For Building Cattle Sheds. Messrs. Potts, Pickup & Dixon, Architects, Oldham.

**PLYMOUTH.**—April 23.—For Construction of Bathing Houses at the Hoe and Iron Shelter on Eastern Platform. Mr. G. D. Bellamy, Borough Engineer, Guildhall, Plymouth.

**RATHOE.**—April 25.—For Building Church. Mr. W. Hague, Architect, 62 Dawson Street, Dublin.

**RESOLVEN.**—April 27.—For Construction of Reservoir and Laying Water Mains. Mr. W. E. Thomas, Surveyor, 58 Water Street, Neath.

**ROCHDALE.**—April 22.—For Glazed Earthenware Pipes, with Bends and Junctions. Mr. S. S. Platt, Borough Surveyor, Town Hall, Rochdale.

**ROCHESTER.**—April 21.—For Building Five Cottages. Mr. J. W. Nash, Architect, 7 Medway Terrace, Rochester.

**SANDBACH.**—April 21.—For Restoration of Wesleyan Chapel. Rev. J. Kent, Sandbach.

**SILVERTOWN.**—April 20.—For Building Detached Private Dwelling-house. Mr. J. O. Cook, Architect, 24 William Street, Woolwich.

**SOMERSHAM.**—April 23.—For Building Organ Chamber to Parish Church. Rev. A. Kirke Smith, Somersham, Hunts.

**ST. DAY.**—April 20.—For Building Chapel. Mr. J. Hicks, Architect, Redruth.

**ST. GEORGE-IN-THE-EAST.**—April 23.—For Breaking-up and Reconstructing with 15-inch Pipe Portion of Sewer in Everard Street. The Surveyor, Vestry Hall.

**ST. MARY CRAY.**—April 28.—For Construction of Retort House, Coal Store, Engine and Boiler Houses, Brick Tank, Sulphate Shed, and Chimney Stack. Mr. F. Morris, C.E., Brentford.

**SWANSEA.**—April 21.—For Alterations and Additions to Morrison Board School. Mr. E. Sidney Hartland, 5 Rutland Street, Swansea.

**SWANSEA.**—April 20.—For Additions to Royal Hotel, High Street. Mr. T. P. Martin, Architect, Heathfield Street, Swansea.

**SWINDON.**—April 22.—For Alterations and Additions to 73 Regent Street. Mr. W. H. Read, Architect, Corn Exchange, Swindon.

**SWINTON.**—For Construction of Outfall Sewage Works. Mr. J. C. Haller, C.E., Swinton, near Rotherham.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**TONGWYNLAIS.**—April 18.—For Building House and Shop. Mr. E. Davies, Tongwynlais, near Cardiff.

**TOTTENHAM.**—April 21.—For Building Engine House, for 100 horse-power engine, at Sewage Works, Page Green. Mr. de Pape, C.E., High Road, Tottenham.

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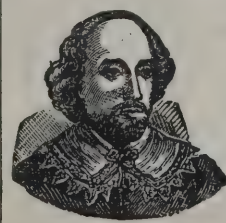
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**TROWBRIDGE.**—April 20.—For Erection of Shedding for Agricultural Show. Mr. M. Jeans, Marlborough.

**ULVERSTON.**—April 27.—For Repairs to Cemetery Chapels. Mr. J. W. Grundy, Architect, Brogden Street, Ulverston.

**WAKEFIELD.**—April 21.—For Alterations and Enlargements at Tetley House. Mr. William Watson, Architect, Barstow Square, Wakefield.

**WHICKHAM.**—April 21.—For Billiard-room, Smoke-room, &c., Dunstan Hall. Mr. F. R. Wilson, Architect, Alnwick.

**WISBECH.**—April 18.—For Painting, Decorating and Improving Public Hall. Messrs. Kerridge & Sons, Architects, Club Chambers, Old Market, Wisbech.

**WORKINGTON.**—April 25.—For Building Three Houses. Messrs. Scott & Murray, Architects, Victoria Buildings, Workington.

**WORSALL.**—April 30.—For Building Wesleyan Chapel. Mr. J. T. Wilson, 20 Albert Road, Stockton.

**WROUGHTON.**—April 30.—For Enlargement of Infant School and other Work. Mr. H. Copleston, Clerk to the School Board, Wroughton.

## TENDERS.

### ABERDEEN.

For the Construction of Pipe Sewers, with Ventilating Manholes, &c., Spital District and Merkland Road, Aberdeen. Mr. W. BOULTON, Surveyor.

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| Gair           | 105 4 0   |
| McKay          | 96 12 2   |
| Gair           | 57 11 0   |

### BRADFORD.

For Building Refuse Destructor on Land at Cemetery Road, Scholemoor, Bradford. Municipal Appliances Co. £1,260 0 0

### BRISTOL.

For Patent Metallic Venetian Blinds for Bristol Hospital for Sick Children.

HODKINSON & CLARKE (Limited), Canada Works, Small Heath, Birmingham (accepted).

### CADOXTON.

For Rebuilding William the Fourth Inn, at Cadoxton-juxta-Barry. Mr. J. P. JONES, Architect, 27 Park Street, Cardiff.

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| Hamlett & Love, Grangetown | £588 10 0 |
| Thorne, Penarth            | 576 0 0   |
| Jones Bros., Cardiff       | 550 0 0   |
| Price, Llanblethery        | 515 0 0   |
| Davies, Cardiff            | 495 0 0   |

### CASTLE EDEN.

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| Curry, Hartlepool                            | 899 5 10 |
| Douglass, Sunderland                         | 891 7 9  |
| D. & J. Rankin, Sunderland                   | 889 0 0  |
| Robson & Tremble, Hetton                     | 861 15 0 |
| Sanderson, Durham                            | 858 10 0 |
| Atkinson, Stockton                           | 832 12 0 |
| Forster, Croxdale                            | 793 0 0  |
| Bell, jun., Coxhoe                           | 779 13 5 |
| Watt, W. Hartlepool                          | 764 0 0  |
| Carter, W. Hartlepool                        | 723 5 5  |
| Bulmer, W. Hartlepool                        | 719 0 0  |
| Robson, Stanton                              | 718 0 0  |
| W. & R. BLACKETT, Bishop Auckland (accepted) | 700 0 0  |

### COLCHESTER.

For part Rebuilding, Underpinning, and Strengthening the Tower of St. Leonard's Church, Hythe Hill, Colchester, damaged by the late earthquake, for the Rector and Churchwardens. Messrs. EBBETTS & COBB, Architects, Savoy House, 115 Strand, W.C., and Trinity Chambers, Colchester.

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| Everett & Son | 700 0 0  |
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For School Furniture for King Henry VIII's Grammar School, Coventry.

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| Makepeace          | 175 0 0   |
| Waters             | 155 0 0   |
| Whiteman & Son     | 157 0 0   |
| Smith              | 152 10 0  |
| GARLICK (accepted) | 121 0 0   |

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| Barnacle & Wootton           | 431 0 0  |
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| Wright                       | 387 10 0 |
| Garlick                      | 385 0 0  |
| BEACHAM, Allesley (accepted) | 365 0 0  |

### GLASGOW.

For Additions and Alterations to Central Police Buildings, Albion and Bell Streets, Glasgow. Mr. JOHN CARRICK, Master of Works.

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| Murdoch, mason                            | £7,178 0 6 |
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J. MACVICAR ANDERSON, Hon. Secretary.  
WILLIAM H. WHITE, Secretary.  
Royal Institute of British Architects, 9 Conduit Street, Hanover Square, London, W.  
April 2, 1885.

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"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

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*Accepted Tenders.*

|   |        |   |   |
|---|--------|---|---|
| Taylor & Co., Littleborough, mason and joiner . . . | £1,470 | 0 | 0 |
| Blacka, Todmorden, plasterer . . .                  | 139    | 0 | 0 |
| Hudson, Littleborough, plumber . . .                | 104    | 0 | 0 |
| Stansfield, Todmorden, painter . . .                | 80     | 0 | 0 |
| Barnes & Sons, Todmorden, slater . . .              | 70     | 0 | 0 |

Total . . . £1,863 0 0

For Building Two Houses at Littleborough, for Mr. John Kershaw. Mr. F. H. SHUTTLEWORTH, Architect, Littleborough.

*Accepted Tenders.*

|   |      |    |   |
|---|------|----|---|
| Hartley, Littleborough, mason . . .       | £328 | 0  | 0 |
| Taylor & Co., Littleborough, joiner . . . | 110  | 10 | 0 |
| Barnes & Sons, Todmorden, slater . . .    | 32   | 0  | 0 |
| Blacka, Todmorden, plasterer . . .        | 29   | 10 | 0 |
| Mills, Littleborough, plumber . . .       | 20   | 5  | 0 |
| Whitworth, Rochdale, painter . . .        | 11   | 2  | 5 |

Total . . . £531 7 5

For Building Lock-up Shop, Littleborough, for Mrs. Chadwick. Mr. F. H. SHUTTLEWORTH, Architect, Littleborough.

*Accepted Tenders.*

|   |     |    |   |
|---|-----|----|---|
| Hartley, Littleborough, mason . . .       | £84 | 0  | 0 |
| Taylor & Co., Littleborough, joiner . . . | 33  | 0  | 0 |
| Mills, Littleborough, plumber . . .       | 11  | 15 | 0 |
| Woolfenden, Rochdale, slater . . .        | 6   | 0  | 0 |
| Whitworth, Rochdale, painter . . .        | 4   | 18 | 9 |
| Blacka, Todmorden, plasterer . . .        | 3   | 18 | 0 |

Total . . . £143 11 9

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For Construction of Brick Sewer in Manor Place, Paddington Green, for the Paddington Vestry:

NEAVE & SON (accepted) . . . £1,000 0 0

For Heating the Badminton Club, Piccadilly. J. L. BACON & Co., London (accepted).

**LONDON—continued.**

For Alterations to the Angel and Crown, 235 Upper Street, Islington, for Messrs. Gerlack & Cox. Mr. R. A. LEWCOCK, Architect, 88 Bishopsgate Street Within, E.C.

|                          |      |    |   |
|--------------------------|------|----|---|
| Colls . . . . .          | £860 | 0  | 0 |
| Shurmur . . . . .        | 693  | 0  | 0 |
| Larter & Sons . . . . .  | 674  | 0  | 0 |
| Toms . . . . .           | 646  | 0  | 0 |
| Marr . . . . .           | 645  | 0  | 0 |
| Jackson & Todd . . . . . | 623  | 10 | 0 |

For Works required to be done in making Alterations and Additions to St. Paul's Church, Wandsworth, for the Building Committee. Mr. HENRY E. COE, Architect. Quantities supplied by Mr. H. P. Foster.

|                              |        |   |   |
|------------------------------|--------|---|---|
| Lucas & Son . . . . .        | £1,098 | 0 | 0 |
| Burman & Sons . . . . .      | 1,087  | 0 | 0 |
| Laphorne & Co. . . . .       | 998    | 0 | 0 |
| Parsons . . . . .            | 911    | 0 | 0 |
| Gregory . . . . .            | 895    | 0 | 0 |
| Turtle & Appleton* . . . . . | 875    | 0 | 0 |

\* Accepted (subject to certain reductions in estimate) at £605.

For New Warehouses, corner of St. Mary Axe and Bevis Marks. Mr. M. E. COLLINS, Architect, 61 Old Broad Street. Quantities supplied by Messrs. Batson Bros.

|                                 |        |   |   |
|---------------------------------|--------|---|---|
| Lawrence & Sons . . . . .       | £4,960 | 0 | 0 |
| Patman & Fotheringham . . . . . | 4,673  | 0 | 0 |
| Shurmur . . . . .               | 4,590  | 0 | 0 |
| Brass & Son . . . . .           | 4,250  | 0 | 0 |
| Colls & Sons . . . . .          | 4,216  | 0 | 0 |
| Shepherd . . . . .              | 4,200  | 0 | 0 |
| Downs . . . . .                 | 4,184  | 0 | 0 |
| Kirk & Randall . . . . .        | 4,022  | 0 | 0 |
| Nightingale . . . . .           | 3,943  | 0 | 0 |
| Morter . . . . .                | 3,939  | 0 | 0 |
| W. & F. Croaker . . . . .       | 3,827  | 0 | 0 |

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|                              |      |    |   |
|------------------------------|------|----|---|
| Bradford . . . . .           | £368 | 10 | 0 |
| Richards . . . . .           | 333  | 15 | 0 |
| Stapleton . . . . .          | 331  | 12 | 6 |
| F. H. & R. Roberts . . . . . | 325  | 0  | 0 |
| Chessum . . . . .            | 311  | 0  | 0 |

**LONG BUCKBY.**

For Alterations and Extensions to the Baptist Schools, Long Buckby.

|                   |      |    |   |
|-------------------|------|----|---|
| Adams . . . . .   | £525 | 0  | 0 |
| Cohen . . . . .   | 498  | 18 | 0 |
| Johnson . . . . . | 496  | 0  | 0 |
| Hickman . . . . . | 465  | 0  | 0 |

**NORWICH.**

For Additional Class-room at Crook's Place Infant School, Norwich. Mr. JOHN H. BROWN, Architect, Cathedral Offices, Norwich.

|                        |      |    |   |
|------------------------|------|----|---|
| Williment . . . . .    | £347 | 15 | 7 |
| Daws . . . . .         | 329  | 9  | 5 |
| Bagley . . . . .       | 315  | 0  | 0 |
| Want . . . . .         | 296  | 0  | 0 |
| Hawes . . . . .        | 295  | 0  | 0 |
| Barnard . . . . .      | 280  | 0  | 0 |
| Youngs & Son . . . . . | 275  | 0  | 0 |
| Lacey . . . . .        | 257  | 0  | 0 |
| Wegg . . . . .         | 250  | 0  | 0 |
| Hammond . . . . .      | 235  | 0  | 0 |
| BENNETT* . . . . .     | 229  | 0  | 0 |

\* Accepted conditionally.

For Additional Class-room at St. Augustine's Infant School, Norwich. Mr. JOHN H. BROWN, Architect, Cathedral Offices, Norwich.

|                        |      |   |   |
|------------------------|------|---|---|
| Daws . . . . .         | £409 | 9 | 5 |
| Hawes . . . . .        | 380  | 0 | 0 |
| Youngs & Son . . . . . | 375  | 0 | 0 |
| Wegg . . . . .         | 365  | 0 | 0 |
| Lacey . . . . .        | 360  | 0 | 0 |
| Want . . . . .         | 354  | 0 | 0 |
| Barnard . . . . .      | 349  | 0 | 0 |
| HAMMOND* . . . . .     | 325  | 0 | 0 |

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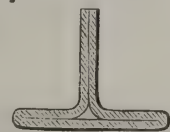
AN action has been taken by Mr. Wisdom, a  
builder at Isleworth, against Miss Caroline  
Brown, who lives in that place, for slander.  
The slander complained of was in these words:  
—"Mr. Wisdom is not a fit man to be church-  
warden, for he could not attend to his own  
business, having been bankrupt two or three  
times," in consequence of which, as the plaintiff  
alleged, he was greatly injured in his credit and  
reputation as a builder, for which he claimed  
250*l.* as damages. The defendant denied the  
plaintiff's statement, and further stated that  
the words, if spoken, were not spoken of him in  
his business. Moreover, she stated that the  
plaintiff was a candidate for the public office  
of people's churchwarden, and the day of elec-  
tion was April 24, whereupon it was mentioned,  
rumoured, and reported in relation to his fitness  
for the office, and that the defendant spoke the

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words in relation to his fitness for the office and not otherwise—that is to say, that he had failed in his own private business, and was therefore incapable of managing public business: and that the words were spoken by her as a voter at a public election, and on a public occasion, and in the public interest in reference to the plaintiff as a candidate for a public office *bonâ fide* and without malice, and in the belief that the words were true.

Mr. McIntyre for the plaintiff, in opening his case commented on the statement that the plaintiff was ever a bankrupt, though ten years ago, under pressure, his creditors had agreed to accept a composition from him. No doubt, he said, the defendant had uttered the words which the plaintiff denied. It appeared that the words were spoken on the occasion of the election, in which Miss Brown took an interest on behalf of the other candidate who succeeded, and that she spoke the words in the course of a canvass on his behalf, and spoke them to the wife of a voter in the heat of the election, and if she had apologised for them he would have been content. But when he had written to her remonstrating with her for language “unworthy of her as a lady or a Christian,” denying her statement, and asking for an apology, she took no notice of the letter and gave it no answer. After a month's delay—allowing her time to cool—his solicitor wrote to her asking her to withdraw the imputation in the local papers, but she ignored the letter altogether, and not until then did the plaintiff bring this action. He would be satisfied even now if she would withdraw the imputation.

Only one witness, a married woman, wife of a voter, was called to prove the speaking of the words to her by the defendant after asking her which way her husband would vote.

The plaintiff was called, and denied that he had ever been a bankrupt or had had bankruptcy proceedings against him, or taken proceedings in bankruptcy. In cross-examination he said that he had since been elected to a parish office, and, being asked as to any particular damage he had suffered, could not state any, but said in a general way that he thought he had not done

so much business since the election in question, and that some of his friends had not been quite so hearty towards him as before.

Mr. Lockwood, Q.C. (with Mr. T. Wheeler), for the defence, called the defendant, who stated that what she had said was spoken as to the election, and was what she had heard of the plaintiff, namely, that he was not likely to take care of parish affairs, as he had not taken good care of his own, and had, she thought, had something to do with his creditors. The defendant admitted, however, that her informant told her he had not failed, and that she herself said—“He has failed, has he?” And being pressed as to whether she had not used the word “bankrupt,” she only said she had not done so “to the best of her knowledge and belief.”

Lord Coleridge, at the close of the evidence on both sides, asked if it was really necessary that such a case should go to the jury. Had the plaintiff suffered any real injury?

Mr. McIntyre said the defendant had never retracted her statement.

Mr. Lockwood said she denied having made it, and he submitted that the occasion was privileged.

His Lordship held that the occasion was privileged, as it was during an election; but this, of course, was subject to the understood limitation that the words were spoken honestly and without malice, and he observed of the plaintiff's letter that it was in its terms rather provoking, as it charged the lady with telling untruths not creditable to her as a “lady or a Christian,” which, he said, was “rather strong” language.

Mr. Lockwood then addressed the jury for the defence, urging that his client had not spoken maliciously, and that she did not understand the difference between “failing” and being “bankrupt,” and merely used a wrong expression by mistake.

Mr. McIntyre submitted that the occasion was not privileged, but

His Lordship adhered to his opinion that it was, as it was the election of a churchwarden, a public officer.

Mr. McIntyre submitted that the words were

not privileged, as they were not spoken to a voter, but

His Lordship thought, as the defendant was a ratepayer, and so interested in the election, she was within the privilege.

Mr. McIntyre then addressed the jury on the part of the plaintiff, urging that the words had been spoken recklessly, without regard to their truth, and in the interest of the other candidate.

Lord Coleridge, in summing up the case to the jury, said it was not every hasty or ill-considered word which was the subject of an action, and even words *primâ facie* actionable were not so if spoken upon a privileged occasion, without malice. It was important not too much to narrow the bounds of privilege and fetter the freedom of speech. And he thought that privilege fairly applied to the occasion of an election to a public parochial office and to a communication made with reference to the election. And the occasion being privileged, then it was for the plaintiff to show that the words were spoken maliciously. Now, malice might be shown from the nature of the statement itself, and if, for instance, the defendant had said here that the plaintiff had been two or three times convicted of felony, there not being a shadow of pretext for such a statement, of course that would be malicious. In the present case it was not certainly like that. No doubt the statement made was not correct and not true in fact, but that was not enough to show malice, for the lady had, as she thought, some foundation for it in a statement made to herself as to the plaintiff having had “something to do with his creditors.” But her informant had told her that the plaintiff had not failed, and she could not positively deny that she had used the word “bankrupt.” The question, then, as to the right of action was whether the defendant had exceeded the bounds of privilege. But then came the question of damages. And as to this his lordship observed that the plaintiff's letter was not very conciliatory. And, on the whole, he really thought that after the excitement of an election the matter might well have rested, and it was hardly worth



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THE SUPERIORITY OF  
THE “HYGEIAN ROCK”

### BUILDING COMPOSITION

Over all other Material for rendering Walls Damp-proof and increasing their strength, is now universally acknowledged by the leading Architects, Engineers, and Contractors.

To meet the rapidly-increasing demand, the Patentee has recently made extensive additions to his Machinery and Plant, which enables him to effect

A REDUCTION OF OVER 25 PER CENT. IN THE PRICE.

WILLIAM WHITE,

Head Office and Works:—BELMONT ROAD, ABERGAVENNY.

The ONLY MEDAL for ROOFING TILES at the INTERNATIONAL HEALTH EXHIBITION, 1884, was awarded to

H. J. & C. MAJOR,

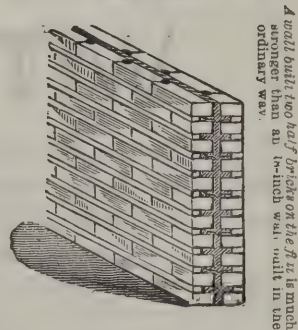
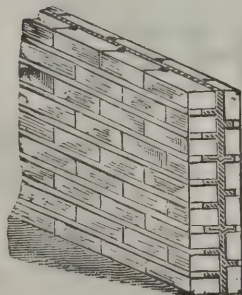
Late SEALY. Established upwards of 200 Years.

### THE PATENT TILE WORKS, BRIDGWATER.

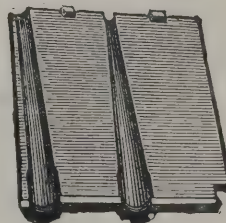
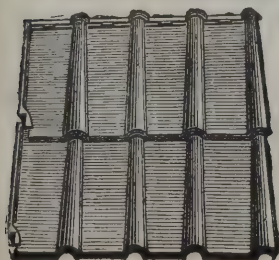
Sole Manufacturers of Non-Porous ROOFING TILES, of various patterns, having C. Major's Patented Improvements, which, forming a double “rabbet” at the top, bottom, and sides of the Tiles, and avoiding cut or unprotected corners, make a secure lap that PREVENTS “WIND-STRIPPING” and ENTIRELY EXCLUDES DRIFTING RAIN AND SNOW.

Manufacturers of the Imperial Bath Scouring Bricks, Patent and other Roofing Tiles, Bakers' Oven Tiles, &c., &c.

A brick on flat and one on edge equal, suitable for Cottages, or where great economy is required, and is equal in strength to a 14-inch wall built with mortar only.



A wall built two half bricks on the flat is much stronger than an 18-inch wall built in the ordinary way.





while to have brought it into Court. Unfortunately, however, the plaintiff had demanded a public apology, and the defendant was unfortunately advised to take no notice of the letters, and so the parties resolved to "fight it out." Well, the occasion was privileged, and the words were privileged, unless they exceeded the occasion and were spoken recklessly, and if so, then there must be a verdict for the plaintiff, but for what damages?

The jury, after a few minutes' consideration, asked what amount would carry costs.

His Lordship said he did not interfere, and a farthing would carry costs as much as 1,000*l*.

The jury considered again, and asked if they could give a verdict for the plaintiff without damages.

His Lordship said no; they must, if they found for the plaintiff, find for some damages.

Thereupon the jury found for the plaintiff for 40*s*.

His Lordship then, on the application of the plaintiff's counsel, gave judgment for him for that amount.

### THE BUXTON SEWAGE WORKS.

THE new works for the treatment of the sewage of Buxton were opened on the 9th inst. They have been carried out on Dr. Thresh's system from plans by Mr. Joseph Hague, designed for the purpose of treating the town sewage by precipitation with iron water and lime, the iron water being conveyed by gravitation in specially-made earthenware tubes, with joints of jute, spun yarn, and cement, from a disused colliery at the foot of the Axe Edge hills. At a short distance from the "heading" entrance to the colliery, the iron water enters a brick receiving tank, constructed on the edge of the brook course nearest the colliery, and is conveyed across the brook in 9-inch metal pipes, supported on stone piers. A series of flushing chambers, supplied with penstocks, is introduced at suitable places along the route, which penstocks are furnished with convenient arrangements for charging the vans for street watering.

The liming and mixing-rooms are erected over the River Wye, supported by a stone semi-circular arch, the liming-room floor being on a level with the adjoining highway, and connected with the Board's sidings on the Midland Railway by an S curved tramway constructed with wrought-iron girders covered with creosote planking, supported by neat and substantially built rock-faced stone piers, with massive ashlar coigns, over which the lime required for precipitation purposes is conveyed from the sidings alluded to to the hopper entrance of the liming machine, which entrance is on a level with the floor, and connected with one of Messrs. Bowes, Scott, & Read's patent liming machines. A cistern of 800 gallons capacity receives the pulped lime from the machine, and is supplied with an agitating apparatus to keep the lime required during the night of a uniform and suitable consistency. Both the machine and agitating apparatus, &c., driven by an "over-shot" water wheel, 16 feet in diameter and 3 feet wide, the water for driving purposes being taken from the Wye, about 500 yards higher up the stream, and conveyed in large sanitary tubes.

Immediately outside the liming and machinery-rooms are constructed duplicate brick tanks, into which the main outlet sewer discharges. The tanks are furnished with wrought-iron screening waggons for the purpose of abstracting the solid and floating matter—estimated at 75 per cent. of the total sediment. The machinery for raising the waggons and lowering them into position consists of a "wench," secured to metal framing, supported on metal columns. After passing through the screening waggons the sewage runs through a brick conduit into a circular metal chamber, furnished with horizontal paddles, where the iron, lime, and sewage is thoroughly mixed. From here the sewage flows a distance of 50 yards through an earthenware conduit to the settling tanks, consisting of two sets so arranged as to work either singly or together. Those tanks are of convenient design, and are constructed of brick walls set in cement, with concrete bottoms, the walls being coped with neatly-

dressed local grit stone. The length of the tanks is 266 feet by 73 feet, and are capable of holding 400,000 gallons. The formation of the tank bottom is of original design, being 3 feet 6 inches deeper at the entrance than at the outlet, an arrangement which has fully met the object for which it was introduced, that is to retain the sludge at the inlet end of the tanks. The first of those tanks is formed with a brick division wall 6 feet from the inlet, supported on arches of a similar material, under which the sewage flows into the second tank and thence through the entire series of tanks, with a barely perceptible motion, to the effluent weir sill, which is of large ashlar tooled-dressed stone curved and bevelled on the front edge, over which the water flows on to the weir bottom, a depth of about 18 inches. The weir consists of courses of Lancashire stone dressed pitching set in cement, with a drip break joint of about  $\frac{3}{4}$  inch, which gives a very pleasing appearance to the effluent, and exercises upon it a powerful oxidising effect. From here the effluent is conducted in a serpentine course into the river, at a distance of about 30 yards below the tanks.

In the centre of the main division-wall at the inlet end of the tanks a triangular well is constructed for cleansing purposes, and is supplied with duplicate iron run-off cloughs so arranged as to remove what water remains owing to the extra depth of the tanks at that end. After the suspended matter has subsided, outside the entrance tank is a sludge-well, fitted with strong chain pump, driven by water power, and with cloughs so arranged as to remove the entire of the sludge. It should be stated that the bottom of this tank is formed with a longitudinal and transverse inclination, with the view of expediting the cleansing process, rendering it thorough and minimising manual labour.

Dr. Thresh, in explaining the system, said he was without faith in sewage farming, and considered that chemical precipitation is the better plan. The iron water from a disused mine removes the matter, and especially with addition of lime. But sewage could be treated much more easily, were every householder to see

## THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.

# VENTILATION WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



after the sanitation of his own dwelling. It is much cheaper to make even a liberal use of disinfecting powder than to pay doctors' bills, and every local board should be compelled to provide a supply of some simple and cheap disinfectant for anyone willing to fetch and use it. For use on slop stones and in water-closets a crude ground sulphate of alumina, which can be bought for about 50s. per ton, or say  $\frac{1}{4}$ d. per pound, mixed with a little carbolic acid, and perhaps lime, forms a splendid deodoriser and disinfectant, and sewage containing these disinfectants putrefies much less rapidly, and is more easily defecated.

### COLONIAL OPINION OF ENGLISH GOODS.

A SPEECH was delivered lately in Auckland by Sir Julius Vogel, the Colonial Treasurer and Postmaster-General, which suggests the prejudice against English manufactures abroad which other countries are exciting. He said:—I cannot help saying that under the Free Trade system of Great Britain there has been a great deal of scamped work and adulteration going on, and that buying in the cheapest market and supplying as cheaply as possible, manufacturers have been in the habit of not conscientiously supplying the best articles. It is only quite recently that by a happy accident—an iron axle falling to the ground and breaking while being unshipped—we were saved from sending forth death and destruction on our railways by using rotten axles sent out from Great Britain. I will give another case which will illustrate how little dependence you can place upon manufacturers under this system, and how much more conscientiously they work under protection when they feel that their whole reputation and success depend upon supplying good articles. I will tell you what happened recently. We sent home an order for certain locomotives after a type which we had running in the colony, and which were obtained from America. It was thought by the late Government

it was unpatriotic to go to America for goods, so the plans and specifications were sent home to England, and the weights and sizes given most exactly. When these locomotives were about finished the engineers telegraphed out that they were about to ship them, but that we had better order plant to strengthen our bridges and culverts, as it would not be safe to send the locomotives over them. Their idea was that we should make our railways to suit their engines. We telegraphed that we would do nothing of the kind—that we had limited the weight of the engines. They replied they could not be made according to the specifications we had supplied. But the answer to that was that we had them running in the colony, and we refused to take them. Well, this is what happened. We sent an order by telegraph to America for these engines, and such is the confidence we feel in the character of the material which will be supplied that we are prepared to take them without inspection there, whilst we cannot take the suspected ones from Great Britain. The Agent-General is in no way to blame in the matter. I have given you this history to show a reason why, even should we require to pay a little more, this work should be done in the colony. We have now called for tenders for the purpose of having locomotives made in the colony, and I trust it will lead to our being ultimately able to obtain all our locomotive plant on the spot.

### TRADE NOTES.

MESSRS. C. ISLER & Co., 88 Southwark Street, S.E., have secured the contract at the International Inventions Exhibition for fifteen of their improved patent registering turnstiles. They have also received orders from the War Office for a number of tube wells and pumps, with the necessary driving apparatus, for immediate delivery at Woolwich.

Two two-light stained-glass windows have just been placed in St. Mary's, Boltons, Kensington. The subjects represented are *Ruth and Boaz*, and *Christ Blessing Little Children*, respectively. These windows, as well as those

already in the church, are the work of Messrs. Mayer & Co., of Munich and London.

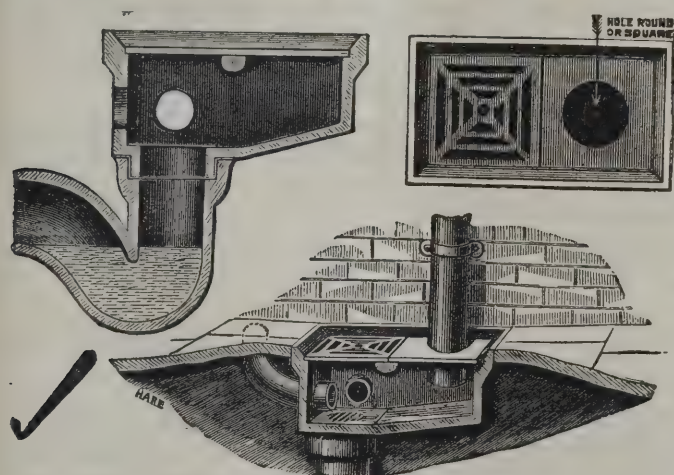
THE second of the churches bequeathed to Bolton by the Greenhalgh family is approaching completion. The present one, dedicated to the Saviour, will be opened early in July. Both are from the designs of Messrs. Paley & Austin, of Lancaster. The carvings and sculpture, together with the execution of the reredos and font, have been entrusted to Mr. Roddis, of Aston Road, Birmingham; and the stained-glass windows to Messrs. Burlison & Grylles, of London.

A STAINED-GLASS WINDOW has been placed in the south aisle of Winslow parish church by Dr. Newham, to the memory of his wife. It is in Early English style, the two principal lights portraying events in the life of St. Margaret, one showing her tending the lambs of her flock while diligently studying the Holy Scriptures; the other her martyrdom, and treading on the serpent of sin. In the tracery above is a portrait of Mrs. Newham. Messrs. Heaton, Butler & Baynes, of Garrick Street, Covent Garden, designed and carried it out.

THE interior of Highfield Church has been adorned with a reredos of glass mosaic, which was opened on Easter Day. The subject represented is *The Last Supper*. The work has been erected at the cost of 160*l.*, and was executed by Messrs. Powell & Sons, Whitefriars.

THE Marble Bath (swimming), Stanley Hall, Junction Road, N., has just been completed by Messrs. H. W. Wilkins & Sons, of Pentonville Road. This is a very handsome and substantial structure, and is not only one of the largest swimming-baths in London, but is the only one constructed of marble. The floor is paved with octagon-shaped slabs of Sicilian, decorated with squares of Rouge Fleurie. The sides are lined with Sicilian, divided into panels by Rouge Fleurie. The walk round the bath is also paved with marble. The superiority of this treatment to that of ordinary baths is very marked. The bath is 60 feet long, 30 feet broad, and has an average depth of 5 feet 6 inches. The whole of the marble work has been executed at a cost of less than 300*l.*

## NOTICE OF REMOVAL. BELLMAN'S PATENT GULLY.



*This Gully possesses the following advantages:—*

**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.**

**Avoids all Splashing.**

**Ventilates the Pipes and Trap.**

**Forms Drain for Area or Surface.**

**Is easy of Access for Clearance.**

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

*The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.*

DESCRIPTIVE CIRCULAR ON APPLICATION.

**THIS GULLY IS HIGHLY RECOMMENDED by Authorities on Sanitary Matters.**

PRICE AT DEPOT:—EDWARD ST., DORSET SQUARE, N.W., 8s. 6d. each.

Also SINGLE GULLIES, for Sink Wastes only, price 3/9 each.

**BELLMAN & IVEY,**  
(OFFICE ONLY) 37 PICCADILLY, LONDON, W.

## GEORGE WOOLLISCROFT & SON,

Chesterton Tileries—North Staffordshire; Canal Tileries—Etruria, Stoke-on-Trent; Patent Tile Works—Hanley, Stoke-on-Trent.

MANUFACTURERS OF ALL KINDS OF

Blue Bricks, suitable for Railway and other purposes. Roof, Ridge, Garden, Encaustic, Glazed, Printed, Painted, Hearth, and other Tiles. Hydraulic Pressed Roof and Floor Tiles, suitable for Churches, Public and other Buildings, as they are lighter, harder, and will not absorb 25 per cent. of water, compared with the ordinary-made Plastic Tiles. Also Paving Bricks made from the above process, and from Rock Marl.

Depot—25A Cookridge Street, LEEDS. LONDON AGENCY—52 Finsbury Pavement, E.C.

SAMPLES AND PRICES ON APPLICATION FREE OF CHARGE.

## READING CASES FOR THE ARCHITECT.

Price Two Shillings.—Office: 175 Strand, London, W.C.





HIGHEST AWARD, the SILVER MEDAL,  
INTERNATIONAL SMOKE ABATEMENT  
EXHIBITION, SOUTH KENSINGTON,

NOV. 1881 to FEB. 1882.

Houses, Infirmarys, Hospitals, Schools, or  
any kind of Building



THOROUGHLY WARMED AND VENTILATED  
BY THE PATENT WARM-AIR GENERATING  
**MANCHESTER GRATES OR STOVES**

*By their use in ground-floor rooms of houses fires in bedrooms are not required.*

ROOMS RENDERED HEALTHY, COMFORTABLE, AND OF AN EQUABLE TEMPERATURE THROUGHOUT.  
Thousands in use in Great Britain, Ireland, and the Continent.

MADE IN EVERY SIZE AND DESIGN.

**SHORLAND'S PATENT MANCHESTER WARM-AIR BACKS**

Are made in every size, and are applicable to every description of Grate Front. No Grate complete without them. They convert the ordinary Open Fire Grate from being the most extravagant into the most economical method of warming. Rooms containing 50,000 cubic feet of space warmed by one Open Fireplace, a feat hitherto considered impossible. Hundreds of testimonials, alphabetically arranged, free on application.

THE PATENT COMBINATION OPEN FIREPLACE

**MANCHESTER STOVE,**

WITH ASCENDING OR DESCENDING SMOKE-FLUE.

Most suitable for rooms having no Fireplaces, such as churches, chapels, schools, halls, billiard-rooms, railway station waiting-rooms, asylums, hospitals, infirmaries. Fills the rooms with pure fresh air in the summer and warmed air in the winter. As in use at the Royal Observatory; Royal Naval College, Greenwich; Royal Naval Hospital, Greenwich; Royal Military Barracks, Eastney, Portsmouth; the Bank of England, and its branches at Manchester, Liverpool, Plymouth, Newcastle-on-Tyne, and Birmingham; and hospitals, banks, asylums, churches, &c., throughout the kingdom.

**VENTILATION BY MEANS OF VERTICAL TUBES,**

Which are made in every size and design, for supplying rooms of every description with Pure Air  
WITHOUT DRAUGHT.

These Vertical Tubes and Bends (which can be easily fixed by an ordinary workman) admit volumes of fresh air from the outside into rooms without draught. The air being delivered in a fountainlike form ascends to the ceiling, where it mingles with the air of the room, gradually falls, and eventually is carried away through the Extractors, Ventilator, or Fireplace.

THOUSANDS IN USE in buildings of every description from the cottage to the palace.

"All difficulties in connection with Ventilation solved by the use of Vertical Tubes" (Vide the TIMES), of which  
SHORLAND IS THE ORIGINATOR, PATENTEE, and MANUFACTURER.

NEW ILLUSTRATED PRICE LIST, WITH TESTIMONIALS, &c., FREE ON APPLICATION.

In use in palaces, gaols, churches, billiard-rooms, banks, workhouses, mansions, cottages, schools, police cells, Royal Observatory, asylums, H.M.'s Government offices, &c., &c.

**LEGAL NOTICE.**

SHORLAND'S PATENT GRATE BACK, No. 3,999, A.D. 1874; known as the "MANCHESTER GRATE."—In the action of Shillito and Others v. Larmuth & Co., 1884, S No. 4,408, on November 24, 1884, a PERPETUAL INJUNCTION was ordered, restraining the Defendants from Infringing SHORLAND'S PATENT, and ordering them to pay the Plaintiffs' costs of the action.

**E. H. SHORLAND, WARMING, SANITARY, & VENTILATING ENGINEER**

(LATE SHILLITO & SHORLAND),

CONTRACTOR TO HER MAJESTY'S GOVERNMENT,

**St. Gabriel's Works, Erskine Street, Manchester.**



# The Architect.

## THE WEEK.

THE sixty-second exhibition of the Society of British Artists, which was opened this week, is one of the best we remember. It suggests the influence which the latest French school is exercising. Many of the pictures would not be out of place in an exhibition of Impressionist works. Whether this is due to the adhesion of Mr. WHISTLER (who sends a full-length portrait of Señor SARASATE, with sundry other notes and arrangements) we need not discuss: it is sufficient to know that there are enough artists of the school to allow of harmony in Suffolk Street. Mr. WYKE BAYLISS is as loyal as ever to architecture, by rendering cathedral interiors in a way that deserves to be called poetic. Mr. F. BARNARD reveals the mental experience of JAMES I. after his first experience of RALEIGH'S tobacco. An opera ball in Paris is apparently inexhaustible in suggesting subjects, and Mr. DUNSMORE shows how HARLEQUIN watched over HAMLET. Mr. CATTERMOLLE has another imitation of Sir JOHN GILBERT; and Mr. DENBY SADLER has for once ceased to arrange his monks in a row, having only three of them. The president of the Society, Mr. BARR, has only one picture, which is good. Mr. NOBLE'S *Friends or Foes*—donkeys contemplating geese—is one of his best works. Mr. WOOLMER'S treatment of light appears more old-fashioned than ever. M. LESSORE'S *Dieppe Quay* and *Shoreham* are well deserving of attention.

THE Synod Hall in Dublin, which was erected at the cost of Mr. ROE, from the designs of the late Mr. STREET, is found to be unsatisfactory in one respect. There is great difficulty felt by the speakers making themselves heard, and in Ireland that means a sort of martyrdom. At last the defect has become unbearable, and on Tuesday the following resolution was adopted:—"That the Standing Committee be requested to take competent advice to improve the acoustics of the Synod Hall with wires, or panelling the walls, or otherwise, and to report to the next Synod, with estimates and their recommendations."

THE Council of the Social Science Association have, after due notice given, unanimously passed a resolution to the effect that, in prospect of a general election in the month of November, it is undesirable to hold a congress during the present year. They have, therefore, been reluctantly compelled to decline the invitation received from the city of Bath to meet there in the forthcoming autumn, but they have expressed a hope that the invitation from that city may be renewed for the year 1886. It has, however, been referred to the Executive Committee for consideration and report, whether a conference of a more limited nature should not be organised in London on some special subject or subjects to which, in view of the opening of a new Parliament, it may be considered desirable to call attention.

IN spite of all that has been done to bring the subject of ventilation before the public, a large class among them have very hazy notions about it. The Chief Inspector of Factories, in his last report, says:—"The due ventilation of a work-room is a matter by no means so easy of solution. The question crops up daily, and it is in no spirit of opposition that we are met with the observation, 'Tell me how I should ventilate this room? How am I to admit a sufficient quantity of fresh air without subjecting the hands to draughts of cold air, to which they will not submit?' It is greatly to be desired, were it possible, to formulate some suggestions for the better ventilation of workrooms. It is of course easy to say the exhausted air must be got rid of and fresh air be introduced, and this must be done, not by a rush of cold air, but by a gradual insensible introduction of pure air to supply the place of that which has been deprived of its health and life-giving properties." If people who buy the goods which are made in the factories asked the chief inspector to tell them how they were to become manufacturers, in spite of his simplicity and benevolence he

would naturally stare, and if mill-owners went to him for instructions as to how new factories were to be constructed, he would probably consider that they had become demented by the state of trade. Why, then, should Mr. REDGRAVE sympathise with the mill-owners when they wish to adopt the principle of "every man his own ventilating engineer," or propose that the country should go to the expense of issuing tablets of instructions to save wealthy men from expending a few pounds? The suggestions would be about as useful as a sheet of recipes for the guidance of a cotton-spinner. Grandmotherly care like that recommended by the inspector has become obsolete: ventilation and building are no more to be accomplished by formulating suggestions than the removal of depression in trade. Let Mr. REDGRAVE first try his formulæ on the last evil before applying them elsewhere.

THE Trustees of the Mason College, Birmingham, have decided to confer the title of "Associate of the Mason Science College" upon all who satisfy the following conditions:—(a) They shall have been systematic students of the college during three sessions—having attended during each of the first two sessions three courses, in separate sections of the college; and during the third session some course approved by the Academic Board. (No course to count unless consisting of at least two lectures weekly.) (b) They shall have obtained one of the following qualifications:—1. A University degree, taken with such distinctions as shall be deemed satisfactory to the Academic Board. 2. They shall have gained three first classes in separate sections in the college examinations, at the end of their first and second years; and at the end of the third year they shall have obtained a report that they have pursued a satisfactory course of study during that year from the professors whose classes they have attended. 3. The senior engineering diploma. The Associateship may be conferred for original research or distinguished merit upon past students of the college who have not fulfilled the above requirements. The Associateship may also be conferred, at the discretion of the Council, upon past members of the staff who have rendered special services to the college. For the present, Associates will have the privileges of the use of the library and free admission to lectures, and admission to the laboratories upon payment of a fee to cover expenses.

FOR a long time painters have been complaining of the photographers, who pirate their works without scruple. At length the tables have been turned, and the photographers profess to be victimised. The remarkable spectacle was exhibited at the Marylebone Police Court of a respectable artist appearing to answer two summonses for having copied a photograph of Miss ANDERSON, the actress. The model employed to sit for the figure gave evidence. Mr. COLLINSON, Mr. CAFFIERI, and other artists testified that there was no similarity between the picture and the photograph, and an actor of the Lyceum company said the picture was not a likeness. It was admitted that the photograph was used to give suggestions for the drapery; and, if the case were brought to the superior courts, we are inclined to doubt whether it would be affirmed that there can be a copyright in the dress of an actress who appears in public.

SOME statistics relating to Greece have been furnished to the Foreign Office. According to the last census "Greece Proper" possessed 335,159 private inhabited houses, 7,518 churches, and 11,341 buildings of various other classes, such as factories, schools, stores, public buildings, barracks, &c. In the ceded provinces of Thessaly and a portion of Epirus, there were 51,879 private inhabited houses, and 5,759 of other classes. In Greece and the Ionian Islands there are said to be 1,800 artists (or 34 per cent. of the population) which is too comprehensive a term to discuss. Art manufactures, with the exception of carpets, do not appear to flourish. The Tripolitza carpets are the best. It is suggested that it would be of advantage if some of the 3,000 students at the University were afforded the opportunity of turning their attention to practical studies of industries and mechanical arts. Manufactures will not flourish in Greece till technical education is fairly widespread.



## THE ENGLISH CATHEDRALS.

THE utility of the English cathedral system is not self-evident when a dignitary like the Archbishop of YORK is found taking a desponding view of the future. According to the newspaper report His Grace, in speaking at a public meeting at Sheffield on the Cathedrals Commission, told his auditors that "the cathedral, with its privileges and its natural jealousy of interference, refused to be moulded into conformity with modern ideas of activity. The Deans and Chapters were treated with indulgent consideration, partly on account of the magnificent fabrics of which they were trustees." It has been long a belief with many people that the conservation of the buildings is the most useful work of the cathedral bodies; and in 1840, when it was proposed to apply a large share of the revenues to parochial uses, a reservation was made in favour of the fabric funds. On that occasion Mr. GLADSTONE, with characteristic ingenuity, turned the proposal into an argument against the Bill, for, as he said, "if the necessity of supplying the spiritual needs of the country constrains us to alienate funds which are applicable to the maintenance of religion, much more are we compelled to abandon the costly work of maintaining the beauty of the cathedral buildings." That beauty, according to the speaker, was no more than an external type and symbol of the spiritual design with which they had been founded.

Whatever may be the shortcomings of Deans and Chapters, there is no doubt that they have not of late been negligent of structural maintenance. It will be said, perhaps, that it would have been better if they had been less zealous, for the costly improvements of WYATVILLE (to name only one restorer) have not been always blessings. But when it is found that out of the 24,000,000*l.* which have been expended between 1840 and 1874 on ecclesiastical buildings in England, a sum of over one million was laid out on cathedral restoration alone, it is plain that the Deans and Chapters have not been indifferent to their trust. That sum would be still higher if it included the cost of the works at Peterborough, Lichfield, and Gloucester and Bristol. It is more remarkable that since 1874 a sum of 470,205*l.* has been expended on cathedrals alone. The greater part may have been derived from restoration funds, but a fair proportion came from the Chapters.

St. Paul's, strange to say, is entitled to the first place. There is always something being done there, but few people will believe that within the last dozen years nearly 67,000*l.* have been paid for works. The improvement of the west area cost 15,625*l.*, nearly all of which was paid by the Corporation in return for the space that was added to the streets. In addition to the capitular fund derived from the lands at Tillingham, in Essex, the Ecclesiastical Commissioners contributed 30,000*l.* The works were rendered necessary by the extension of the services. A new chapel has been fitted up at the east end, the walls have been cleaned down, the pavements and steps have been repaired, the leadwork has been overhauled; an additional rail on the whispering gallery to protect sightseers is also an item of expense. Sanitary excitement is able to penetrate the walls of the chapter-houses, and a tribute to it is found in the new drains for the chapter-house and cathedral, which are now nearly completed.

In Chester, where renovation is in progress, the outlay was over 49,000*l.* This cathedral will illustrate the position of the authorities. There is no fabric fund, and the sum of 2,132*l.*, which was paid for restoring perishable stone, was only to be obtained by the Dean and Canons surrendering a part of their own incomes. The contributions to the restoration fund were mainly expended on the restoration of the choir. The Dean and Chapter of Lichfield have set apart 750*l.* a year since 1877 for repairs; the Ecclesiastical Commissioners gave 15,000*l.* towards the renewal of the west front, and a corresponding sum was subscribed. With the aid of rent and fines the Chapter were able to pay 43,000*l.* for the work on the west front, and in addition 7,000*l.* has been expended on the lady chapel, consistory court, &c. Costly as the work has been, yet the Dean points out that it forms no more than a small part of what remains to be executed for the renovation of the exterior of the cathedral.

Salisbury is another expensive cathedral. The Chapter

contributes a sum of about 334*l.* a year for repairs, but the restoration has cost in ten years 42,258*l.* The people in the diocese appear to be inspired by much generosity, for on a total outlay of 83,000*l.* the Ecclesiastical Commissioners' aid amounted to an eighth part. Durham is wealthy, and, with the exception of windows, which were gifts, was able to pay for restoration out of income or capital. Manchester is fortunate in finding wealthy benefactors. At the end of next year the expenditure on the cathedral is expected to reach 89,000*l.*, and, with the exception of 10,000*l.* from the Chapter and Ecclesiastical Commissioners, it represents subscriptions and gifts. Bristol is an instance of what can be done when there is an energetic head for the Chapter. Dean ELIOT was appointed in 1850. The cathedral was then truncated, the part set apart for worship being circumscribed and inconvenient. In the course of twelve years about 13,000*l.* was expended on the interior, of which sum more than one-half came from the Chapter. Then it was discovered that the west end was in a dangerous condition. The repairs cost 6,000*l.*, and the money was obtained by appropriating capital which had been assigned for the endowment of the Chapter. The public next undertook the construction of a nave, and additional subscriptions have been obtained for other purposes. In all, the expenditure has been 77,447*l.* But the two western towers still remain on paper, and the Dean says that the old part of the fabric will need an expenditure, even if only to insure its safety, of a larger sum than he ventures to name.

The latter statement might be taken to represent the apprehensions of many deans. In the neighbouring diocese of Gloucester the moiety of income belonging to the Chapter has fallen from 4,230*l.* to 3,265*l.*, while the expenses have increased by about 500*l.* a year. "Now, inasmuch as the residue of this moiety is the only means at present available for the maintenance of the fabric, it is evident," writes Dean LAW, "that nothing will be left for the purpose." The average expenditure on Gloucester Cathedral is about 1,000*l.* a year, and apparently the architect receives no commission for his services.

At present the Bishop appears to be allowed to enter the cathedral and sit on the throne which gives a title to the building, only by the courtesy of the Dean and Chapter. The Commissioners say they have "endeavoured to define and establish the relation in which the Bishop stands to the cathedral, and have made provision for assuring to him his legitimate position and influence." One of the devices proposed as a recognition of the Bishop's authority is the presentation of a report at the visitations upon the fabric of the building, which it is expected will "have the effect not only of securing for posterity an important record of all that has been done in the way of substantial repair and alteration, but also of drawing attention to what is being done and what may be required to be done from time to time for the welfare of the fabric." The responsibility for the conservation will, of course, still devolve upon the capitular authorities.

The question will be asked, Where are the funds to come from in cases like Gloucester and Bristol, where the fabric funds have fallen out of proportion to the cost of repairs? The Commissioners apprehend that when the subject is seriously discussed it may be found "that adequate provision cannot be made out of the property at present possessed by the capitular bodies," and in that contingency the only available resource appears to be the funds of the Ecclesiastical Commissioners. It is not reassuring to learn that "in the arrangements which have been made in recent times between the Ecclesiastical Commissioners and the capitular bodies, the requirements of the fabrics have not in all cases received the consideration which their importance would seem to have demanded." The only conclusion we can draw from this enigmatic statement is that the Commissioners have not been liberal in contributing to works, and, if so, it amounts almost to an indictment of that authority. For it is a serious matter to allow danger to arise which might have been avoided by a grant from the funds of the Commissioners. It is, we fear, too true that, owing to the modern notions of activity which prevail here and there, the cathedrals are not considered important in the eyes of general or local authorities, and if the bishops can put an end to the indifference, it is to be hoped they will be endowed with their new powers without loss of time.



## VIOLLET LE DUC.

[BY A CORRESPONDENT.]

IF I were inspired by a desire to be numbered amongst men of fame, or, in plain English, had a wish to be spoken about occasionally hereafter, I could hardly find a way more effectual to attain that end than by a book resembling one which MM. FOSSEY ET CIE. have lately published, containing drawings and designs by VIOLLET LE DUC. It is more pleasant to have charge of the erection of buildings than to make fine designs which are never to be handled by contractors and clerks of works, but when one seeks for future fame it is not safe to depend altogether on masonry. Some may say that this is like the reasoning with which the Duke in "Measure for Measure" tries to make CLAUDIO feel that life is not worth living. Even so; it may have its use. How many church-goers would be able to say who was the architect of the structure in which they worshipped on Sunday last? In modern times work-houses seem to be the only buildings on which it becomes customary to inscribe the architect's name, and then it depends on the size of the tablet and the number of guardians who have a wish that their names should go down to posterity. In the majority of cases there is no record that is enduring. But when a collection of plates executed in the best style is sent forth in honour of a man, it may be safely assumed that he cannot be forgotten. Books are not necessarily respected, despite of the Mohammedan injunction that every scrap which bears a letter should meet with reverence. The bindings as well as the pages may fall from their high estate. Plates, on the contrary, have a charmed life, with which even butter-men and office-keepers are afraid to meddle. They may undergo transformations, and find themselves in strange company in auction rooms, and be separated in scrap-books and albums or on screens; still, any state is preferable to dissolution in paper-mill.

M. RENAN lately said that if he cared for a future existence it would be in the form of a Prayer-book, and to be used only by ladies with small hands, wearing Paris gloves which were well cut. The dream is natural in a professor who is accustomed to the adulation of *salons*, and who is so charming a personage that the Princess IDA would relax the rules of Castle Adamant in his favour, and instal M. RENAN as the historian of the foundress of the Babylonian Wall, the Carian ARTEMESIA, and Eastern strong-minded ladies. As I am not accustomed to luxury, my ambition is different. If I have to exist in the bookish state let the metempsychosis be into something that resembles the "Compositions et Dessins" of VIOLLET LE DUC. I am not afraid of the ungloved hands of students, and it would be a flattery if I found myself worn down by fair use. That form of memorial would be better than any stone-cutter's work in a cemetery. I want no inscription appealing for kindly criticism on my designs, although they would be more likely to receive it when the profession felt that a ghost, however inconvenient, cannot enter into competitions. Even when the hardest things were said about them there would be a satisfaction in feeling (that is if books can feel) that one had still something to do with the art of building. Sometimes a friendly student might say, as he turned over the pages, "How well that man used to design! It is strange that his work could not be appreciated until it was too late." Then a critic of the right sort might come and point out that there was not a line of value in the designs. I can hear him saying, "The fellow had only a good memory and could draw well. He was an archæologist rather than an architect. I am inclined to doubt whether he was able to appreciate the difference between the style of one period and another; there is no muscularity about his figures, and I am confident he was colour blind." Perhaps the critic would turn to the pages in which I had attempted to express the joy that I had so often obtained from the curves I saw in common grass, and pointing to them in scorn, say, "You see he could not even select things that were of use in green-houses; he had a low sort of taste, and there is not a line to show that he understood Assyrian sculpture, or could draw the figure." Hard as all this might be, it keeps you from being forgotten, and what more could be done by the chisel of PHIDIAS?

I was set musing in this fantastic way by a discussion which I heard among several students in a public library, and it arose over the noble work which illustrates the art of VIOLLET LE DUC. It is needless to say that I was not serious when I fancied publishers bringing out a book of my designs at their own cost. If the works of COCKERELL, and ELMES, and STREET, and BURGESS, and DIGBY WYATT, and many more, have no attraction for enterprising firms, I could not expect them to care much for my humble efforts, nor have I a desire for my memory to outlive my life, if there must be a loss to any man and a transgression of the laws of political economy. An architect has but little chance of renown, alive or dead, in this country, and we must learn to plod along without it.

I think it may be safely said that, if VIOLLET LE DUC had been born on the west side of the Channel, we should have no memorial volume bearing his name to give delight for many years to come. But it is doubtful whether he might not have had a more successful career as an architect in this country than in France. Here he would have found himself in his right place. Born in 1814 (two years after WELBY PUGIN and three years after GILBERT SCOTT), he was in time to take his part in the Gothic Revival with profit as well as pleasure to himself. VIOLLET LE DUC was not a zealot like PUGIN, eager to make enemies of his supporters for love of the cause, or ambitious to acquire a character for costliness like BURGESS, and with so much learning he need have little fear of the censures of amateur ecclesiologists. He must have been popular here, having both tact and kindness of manner, and a large share of the commissions for Gothic houses and churches would have reached him.

In France, or rather in Paris, VIOLLET LE DUC was as much out of place as in place. All things considered, he was as safe a man as could be found to look after restorations, for he possessed a surprising knowledge of details, and had rather less eagerness than his contemporaries in France to make additions and alterations appear more striking than the remainder of the work. The closeness with which he was associated with Mediæval work was, however, enough to raise a prejudice against him among his countrymen. France has a sort of pride in its ancient buildings, although the establishment of the Historical Monuments Commission under MERIMÉE suggests the risks to which they were liable with local conservators. But there is nothing to show that the affection for Gothic ways goes much further. Long before the Revolution of 1789 the French intellect had separated itself from Mediævalism. If any one will turn to the dissertation on Classic and Gothic architecture which M. FELIBIEN penned, they will see with what an air of superiority the fine gentlemen of the Court and Academy under LOUIS XIV. looked down on Pointed work, and assured themselves that any beauty which might be found there came by accident. Gothic churches were Classicised as far as the money in hand would allow. There is now a more philosophical recognition of the position of the style in art history, but that is all.

In this century of ours, many things have arisen which have thrown a poetic halo around the darkest of the dark ages; but France might be considered to be proof against all glamour of the kind. For a moment it was supposed that an enchanter had arisen. The great romance of "Nôtre Dame" was enough to make men believe that Gothic times were about to be made attractive in France. In spite of the opportunities which that class of subjects offered to his genius, VICTOR HUGO abandoned them, and he alone was competent to follow WALTER SCOTT. The romances of DUMAS, in spite of their attractiveness, were not exactly of the kind that gives a character to an era. France was likewise without an influence like that of the High Church revival to aid in creating an affection for Gothic. To gratify Queen AMÉLIE a picture of a Mediæval character was painted by DELAROCHE, and a Gothic church was commenced in Paris which is known as Ste. Clotilde. The two spires did not, however, contrast over well with the neighbouring dome of the Invalides when seen from the Place de la Concorde, and no architectural revolution followed the completion of the building. No architect was more likely to obtain a commission for a Gothic church than VIOLLET LE DUC, if one of any importance existed; but I believe I am correct in saying that in all France there are no more than two village churches (I do not speak of the



restorations) which have been entirely carried out from his plans. Opportunities of designing new buildings were withheld from him, and then it was gravely said that he was deficient in creative power. In England we are familiar with judgments which are no less logical.

The life of VIOLLET LE DUC has not been written with the fulness which it merits, and a stranger in considering his character soon finds himself in a difficulty. That VIOLLET LE DUC wrote about Gothic architecture with more amplitude than any man of his age is undoubted; that the greater part of his life was devoted to that style is no less true; yet it is by no means clear that he believed it to be the one style as enthusiasts generally do. He was a Frenchman to the tips of his fingers, and in everything was abreast of his time. Is it not possible that occasionally at least he looked on Gothic with the eyes of his fellow-countrymen? In his lectures he maintains that to study Gothic work exclusively is to return towards barbarism, and he upholds the style which he had made his own, not for its beauty or pre-eminence, or suitability above all others, but simply because it represented freedom to his mind. Roman work he regarded as something which had to be carried out according to rule, while Greek and Gothic allowed liberty. A Greek artist would, according to VIOLLET LE DUC, recognise an ally in a Mediævalist, while the Roman would appear as an oppressor. He was an advocate for the introduction of new materials—iron, for example—in buildings, and on that account he gave the preference to Gothic. The acknowledgment that it was as impossible to create Gothic as Greek, because the times were different, and that all we could do was to imbue ourselves with the ancient spirit, was, however, enough to make people keep more closely to their Renaissance, for, with all its faults, it was familiar. If pasticcios were inevitable, they might as well be in that form as in any other.

A Frenchman must have felt that VIOLLET LE DUC, when exemplifying how well he was imbued with the Gothic spirit, was compelled to restrain his own power. He was, as it were, putting a drag on his genius. It is plain that he knew the difference between good and bad figure-work. No one could have spent so much time in drawing from cats without attaining competence to represent figures of many other kinds. Besides, it is plain from his sketches that VIOLLET-LE-DUC could draw the human figure fairly well, and he always introduces figures in connection with architecture in a way that shows the master-hand. In his sculpture, on the other hand, he disregards nature in order to give it a typical character. There is no doubt that the architect is generally right; but the necessity for the sacrifice is not apparent to a Frenchman who is disposed to be sceptical, unless it is unavoidable. If it be indispensable to have distorted figures with Gothic architecture, he prefers that his new church or other building should be in a style which can be completed in all its decoration without giving him pain. If the Italian is commonplace, he can find architects who will give another style, which allows of the best figure-work without apparent injury, and thus he builds expensive Trinités and Augustins, and is happy.

There was another and a more important cause to prevent Gothic from becoming a popular style in France. What makes the French language, which is so admirable for the expression of thoughts in prose, fail when it is the exponent of poetry, so that versification becomes mere *enfantillage*, as HEINE described the art? Is it not mainly from the excessive clearness which must reveal everything and leave nothing to the imagination? A "limed soul struggling to be free" expresses itself often in words or forms which become poetry and art, and a Gothic building—I speak, of course, of the genuine kind—is more delightful in proportion as we have to make out the thoughts of the builders. The men in those days did not wear their hearts upon their sleeves for daws to peck, and it is only by a loving study that we can understand their feelings. I remember reading somewhere a remark of VIOLLET LE DUC upon the joy which the old masons must have felt in making a copy in stone of a little flower or weed which they had picked up. For a brief space they had a possession which no cleric or layman could wrench from them, and so much liberty and sense of ownership was a luxury from its novelty. It struck me at the time as a revelation, for in this miniature of a learned archæologist the oppression

of the feudal age was depicted. Not only the floral ornament but other things are records in cypher of thoughts which, without that medium, must have been suppressed. The impediments may have had their use in helping to make every mason an artist, but to the average boulevardier the reproduction in a permanent form of details which were produced under those circumstances is more impolitic than the compilation of articles for an evening paper out of *lettres de cachet*.

Among his contemporaries there was no artist who possessed more of French precision and brightness than VIOLLET LE DUC. In his sketches he does not imitate the painful efforts of men who endeavour to be more true than photography, and he never fails to impart an air of life to his drawings. But his love of lines which seem to have been drawn by a needle, and of mechanical aids to insure accuracy when the lines were long or formed large curves, are evidence of his nationality. The illustrations in his works are distinguished from those in German and English books by their clearness. When pictorial effects are necessary care is taken to keep them subservient to the lines, and thus the character of every object is sufficiently expressed. The French love of system is no less apparent in everything he did. How he was able to accomplish so much appears always a mystery, and he could not get through his work, in spite of his unceasing industry, if it were not for his systematic division of each day's labours. He was as thrifty in the use of space as of time. VIOLLET LE DUC should be taken as a model for illustrators of books. His cuts could never be reduced without injury, for the space has been proportioned to the amount of the detail. He was so regardless of space that he must have been good in planning; but the French public cared as little for his houses as for his churches. Two or three houses in Paris, and one or two in the provinces, represent the patronage he secured in domestic work. It is the more remarkable when every one knew that VIOLLET LE DUC was as efficient in construction as in draughtsmanship. Workmen were always ready to become eloquent in his praise, and of all critics they are the hardest to convince about an architect's qualifications.

How an architect who was possessed of so much finesse could be attracted by a style that is marked by its *sauvagerie* is one of the mysteries of modern Paris. VIOLLET LE DUC was more akin to ancient Greeks than ancient Goths, and apparently he is never so much in his element as when drawing and describing Greek work. There was only one drawback apparently. He was very fond of leaves, and Gothic alone gave him ample opportunities for their introduction. The contours of his leaves, as of his mouldings, are, however, very often suggestive of Greece.

I have long thought that it was a misfortune for France, and for modern architecture, when VIOLLET LE DUC was enticed by DURAND to give him aid in his archaeological annals. I am not forgetting the splendid series of volumes which followed from that introduction, beginning with the sixteen volumes of the two dictionnaires, and ending with the "Compositions et Desseins" which I have now before me, and which are almost as creditable to the publishers as to the author. But I think it is better for an architect to build than to write, and the supposition that VIOLLET LE DUC was a Gothicism deprived him of the fortune which was his by right of genius. Men point to his chapter-house in Paris as a proof that he was not a good designer. I maintain that he was then hampered by difficulties, and, indeed, he was rarely able to do himself full justice. I think he would have been a great architect if he had followed out his early studies, but he sacrificed himself to archæology. May a happier lot be ours.

#### PETERBOROUGH CATHEDRAL.

THE following is the award of the Archbishop of Canterbury as arbitrator on the questions relating to the tower of Peterborough Cathedral, to which we referred last week:—

To the Dean and Chapter and other Members of the Restoration Committee of Peterborough Cathedral.

Very Reverend Sir, my Lords, and Gentlemen,—I have the honour to inform you that I duly received the two clearly-drawn "cases" explaining fully the different views taken within your



body as to the restoration of your cathedral tower, and with them abundant illustrations in the way of drawings and photographs; that I inspected the architectural remains, that I have had the advantage of a special interview with your representatives and with Mr. Pearson, and that I have given my most earnest consideration to the important questions referred to me by you.

Two questions are raised in the cases, viz. :—

I. The relation of the Chapter to the whole committee, and

II. The choice between two proposals for the restoration of the tower.

1. To the former of these my attention was properly directed in an emphatic way by the representatives on both sides, and I shall be pardoned if I venture to say that a true understanding on this head appears to me more important, if possible, to the restoration of the cathedral than the decision on the tower alone, because the constitution of the committee affects, and must indeed govern, the whole of your great undertaking for many years to come.

The committee consists of fifty or more members not appointed (I understand) on any systematic scheme. The Dean and residentiary Canons are naturally *ex officio* members of it. Its decisions are by majorities of members able to attend on each occasion. The Canons claim to control every decision, and state that they have originated every proposal and formed a decision on each step (until the proposal about the tower) before it came to the committee.

They have "practically conceded a veto on every step" to the committee, but have "not contemplated divesting themselves of any of the rights or responsibilities relative to the cathedral fabric which are inherent in the Dean and Chapter," and "that the committee was formed for the purpose of obtaining funds."

It is pointed out that on this basis any three of the Canons acting together as forming the majority in the residentiary Chapter would in any difference have the entire control of all proceedings.

Further serious and grave difficulties would, it is inferred, flow from this position, and it is urged that the Canons have in reality divested themselves of important responsibilities by their contract with the builder, in which he engages to look only to the subscription fund for his remuneration.

My opinion is that such a constitution of the committee as is above described is absolutely hopeless as regards the successful execution of a great work. Every difference of opinion adhered to by such sections of the body as are supposed above would be insoluble except (as now) by an appeal to an external arbitrator.

The principle is as defective as the practice would be difficult. Among other "rights" the Chapter certainly have the right of associating with themselves, as advisers in a crisis of the fabric, their ablest and most willing supporters in the cost and labour of its restoration. This, according to analogy in such cases, they are presumed to have done in convoking so important a general committee as the present.

Their first action in conjunction with such a committee (which is obviously too large for frequent actual consultation) should have been to nominate an executive committee, who again should have named a small sub-committee to carry out details and watch the work.

This method has acted within my experience harmoniously and successfully at Truro and elsewhere.

As the only possible means of determining the first question submitted to me, and of providing a serviceable method of continuing the work without frequent difficulties, I advise the immediate formation of a committee on a sound basis with a clear understanding of its functions.

In order to make my meaning clear, I should assume the Dean and four canons to be *ex-officio* members of the executive committee, and should suggest that the Dean and Chapter should appoint four other members, and that the subscribers (or the general committee as representing them) should appoint eight more members. The Dean would be chairman.

Three of the members (not *ex officio*) might annually retire and be capable of reappointment.

This gives an acting or executive committee of seventeen, who would appoint a sub-committee of three on the spot to watch the work constantly, and to carry out details committed to them by the executive committee.

The general committee (which might then, perhaps, with advantage even enlarge itself) should meet once or twice a year to receive reports from the executive committee and to consider large operations and general principles.

I believe it is only in some such way as this that the Chapter could practically derive the full assistance which it should expect from the general committee called in to aid their great work.

2. The restoration of the tower.

I desire, first, to say that if the committee had been originally constituted in the manner now recommended, this question 2 would never have arisen to be arbitrated upon, but would have

been determined within the committee. The committee have in this instance, with much judgment, recognised that severance on which the canons had laid stress, but which they likewise have used with moderation in proposing arbitration.

Since I consider, however, that the committee ought always to have been so formed as to have rendered reference to me superfluous, and since I advise that it be immediately so constituted, the next step would suitably be that the executive committee should, upon its formation, resume the question of the tower into its own deliberation, and determine within itself, by its own powers, the course to be pursued.

Then the whole of the restoration would be carried out on one principle. It might be matter of regret hereafter that part had been done on external authority, and part by the representatives of the cathedral and the counties. Greater general satisfaction would be felt in a united work.

In the meantime, I am bound to place before you the decision which I have arrived at, and if the committee be not formed this judgment will stand as the decision of the arbitration. But if the general interests of this great work are consulted in the way which I think so necessary, by the formation of a committee, I beg to be allowed to waive in its favour the authority committed to me, and simply to place my opinion in their hands to be dealt with wholly, and only as they think best.

It is as follows :—

The original intention with which the restoration was begun was to replace in sound condition every portion of the tower and lantern which was in existence before architectural demolition began, and it was contemplated that at some time or other additions might be made to the lantern, whether upon some plan analogous to the old octagon or on some other. It followed that such strength should be given to the reconstruction as not to put such heightening out of the question. But the prospect was not treated as immediate. This is the plan specified in the contract which was made. One party to the discussion adheres to this plan still. This is one of the two schemes between which I am desired to make choice. I will call it plan A.

The other scheme, which I will call B, is really a residuum of other plans. It did not spring up of itself. It is what remains through successive changes of a proposal for a high Norman tower to be erected (or re-erected) from the ground upon two ancient Norman arches, and two others to be substituted for the Pointed arches east and west, with an upper stage of Decorated work, corresponding to the present lantern and following its main lines, but much heightened and embellished. Into the lower arcade of the tower, immediately above the great Norman arches, were to be worked the remnants which have been found of the original arcading, and the whole was, according to this proposal, to be crowned with a high spire.

The spire was to be 350 feet high, or 50 feet short of Salisbury; the tower on which it stood 224 feet high, 40 feet short of the central tower of Lincoln. The lantern to be open to the height of 172 feet from the pavement, 12 feet more than double the height of the church.

It has been urged on behalf of this first proposal that so commanding an object on the great eastern levels, visible even from the sea, and itself a triumph of architectural skill, would be worthy of the devotion and ambition of the great district of which the cathedral is the pride. If this be part of your object I believe it could scarcely be fulfilled in a more magnificent manner. I have long since paid a practical homage to the genius of Mr. Pearson, and I feel that this tower and spire would be worthy of him. This conception, however, appears to be something wholly separate and distinct from the objects with which the restoration of the failing pride and grace of the fabric was begun.

There have been three intermediate plans, each diminishing somewhat from its predecessor—viz., one plan of the spire with a lower tower, and two plans of towers without spires. The last of these three is known as "Mr. Pearson's modified plan," preserving the main characteristics of his former ones, but with the upper of the Norman storeys omitted.

Finally, adapted from this, came the "committee's modified plan," which has Mr. Pearson's partial assent. This is plan B.

It was necessary to acquaint myself with the successive proposals in order that I might understand how B originated as the last modification of what had gone before. But I have no further concern with any of those proposals. My duty now is absolutely limited to comparing plan A with plan B, and giving a judgment in favour of one as against the other.

I am accordingly to choose between

A, viz., the replacement of the Pointed arches of A.D. 1380 east and west of the crossing; above these the present Decorated lantern of that date, as it lately rode the four great roofs; with provision for a future superstructure, possibly an octagon, as anciently—and B, substitution of Norman arches for Pointed; above these a Norman storey, 15 feet to 18 feet high, working in the relics, which probably formed an arcade before A.D. 1380; above this the Decorated lantern, neces-



sarily remodelled to its new position, battlement, and high pinnacles.

This plan B is recommended by being the reproduction of a fragment of the great tower which preceded the Pointed work, to be reconstructed by help of (1) the remnant of the arcade, of which there exists one-third of the whole four sides, and of (2) the fragments of the great Norman arches—these amount to only four or five usable stones (valuable nevertheless as evidence); but the rebuilding of the now demolished south and north arches will set at liberty (since greater stones must be now used for the springers) enough to rebuild one arch, exclusive of its springers—that is, exclusive of 12 feet 6 inches on each side above the capitals. These entire remains, therefore, are not very large, though very interesting.

Three points in B remain to be considered :—

- (a) The abolition of the Pointed arches ;
- (b) The alterations of the lantern ;
- (c) The intermediate Norman storey.
- (a) Ought the Pointed arches to be abolished ?

In favour of abolition it is urged that they are less “fine and rich” than indeed are “poor and mean” in comparison with the Norman. But they are allowed to be good Decorated work, so that this criticism is only to be taken as a general disparagement of the Decorated style in comparison with the Norman.

Against abolition is the fact that they are the central point of the fourteenth-century remodelling of the whole church. They correspond to the west windows and the internal advanced arch before it, to the groining of the choir roof, to the Pointed labels so carefully inserted over every clerestory window (as well as over the side arches of the crossing), and lastly to the lantern itself, which they supported. With all these the Pointed arches form one sequence. If they are abolished on principle in favour of Norman, much else ought to be abolished throughout the church as fast as opportunities occur, and probably the lantern itself.

(b) The lantern, if suspended at a greater height, *i.e.* above the Norman arcade—would have to be singularly altered. It was specially designed to ride close down upon the roofs. Its windows would have to be altered in shape and in length, and the blind panelling between the windows, which was so arranged as to fit down above the gable, would be without meaning when lifted a space above it.

As to both (a) and (b), if it is argued that the “Pointed arches and lantern are gone already,” great care was to be used (and I believe has been) in so removing them that they could be used again. In any case the Norman tower and arches are much more “gone.” What is really lost is the north-east pier, so interestingly restored about 1380, and only now abolished in rebuilding.

(c) The Norman inserted storey. This could not be (for constructive reasons) less than 15 feet to 18 feet high. The narrow arcading could not be lengthened to that height without losing character. There will be then an interval between it and the lantern, which must either be blank or covered by a new overhanging Decorated gallery. This would have a constructive use also, but would contract the lantern by not less than 6 feet in each diameter.

To sum up.

B has the recommendations—

First, of recovering into its place the design of one of the stages of arcading, and of incorporating an existing remnant of it. This, as a mode of gaining height, is recommended by its faithfulness to the past.

Second, and of substituting copies (with some genuine fragments) of the earlier Norman arches in places of the actual past of the last five centuries. This is recommended on the ground of preference for the style, as well as of the pursuit of superior antiquity.

But B has the following disadvantages :—That

(1) As against the principle of faithfulness to the past, it obliterates the mechanical effort of 1380 and the chief features of the “Pointed” remodelling of the whole church about that time ; and

(2) Alters the design and adaptation of the lantern to its place.

(3) That it leaves a large space between the arcade and lantern to be either a blank or to be used to introduce a novel and most prominent addition.

(4) That it presents an assemblage of features never before in juxtaposition, partly copied and partly old ; the old altered in some characteristic points (lantern) to enable them to be fitted together, and the oldest portion appearing between the newest and that which belongs to the middle period.

The disadvantages of B seem to me rather to outweigh its advantages, and, balancing merits and demerits in the two plans (which is all that I have to do), I cannot but recommend

That the first plan A be adhered to as originally intended and provided for—*viz.*, of replacing in solid and durable work the form of the tower and arches which we received, providing

at the same time what may be necessary as preliminary as to heightening the tower, whether by octagon or otherwise.

And that the recovered fragments be fitted together, as well as they can, in some place where they may illustrate the antiquities of the church.

I must apologise for the length of these remarks, and will conclude simply by repeating :—

1. That in my judgment it is essential to form an executive committee, and that

2. When this is done their own first function should be to decide themselves about the restoration of the tower.

This opinion of mine on question 2 may then be regarded by them in whatever light may seem suitable, their appointment superseding the necessity for arbitration.

I have the honour to be, Very Reverend Sir, my Lords, and Gentlemen, your most faithful, obedient servant,

April 11.

EDW. CANTAU.

## ART IN IRELAND.

THE annual meeting of the Art Union of Ireland was held in Dublin on the 17th inst. Lord Powerscourt presided, and in addressing the members reviewed the progress of art during the year. His lordship said :—I have great pleasure in congratulating the Royal Hibernian Academy upon its prosperity, as shown by the report of the council for 1883-84. The sales of works of art appear to be increasing both in number and importance, and the general standard of merit in the students has been decidedly higher of late years. I observe with the greatest satisfaction that the receipts, including season-tickets, amounted last year to 766*l.* 1*s.* 8*d.*, being an increase on the year before of no less than 214*l.* 3*s.* 8*d.* This sign of public appreciation will, no doubt, continue as the quality of the works exhibited keep up to a high standard. The Academy has also adopted a most praiseworthy course in admitting free the pupils of various educational institutions. The exhibition has also, in common with the National Gallery in Merrion Square and the Science and Art Museum in Leinster House, been opened on some Sundays. This was, of course, intended for the benefit of the poor, but, curiously enough, and, as I think, unfairly, it has been taken advantage of by those who could well afford to assist the Academy by paying at the door on week-days, which certainly was not the intention of the governing body, and seems hardly a fair proceeding. I cannot pass to other subjects without referring to the progress being made by some of the students of the Academy. One of them, four of whose works are hung on these walls—three of them having been placed by the “hanging committee” on the line—a sufficient proof of the good opinion of the senior Academicians—has distinguished himself especially by being the first Irish student that ever gained the first place among the art scholars at Antwerp. In that school, one of the highest on the Continent, in the city of Reubens, one of our young native artists has won his spurs ; and I must congratulate him personally, and also this institution, on the fact of one of our alumni having received this mark of distinction at a place so celebrated, both in former times and at the present, for having turned out so many great painters. I hope that Mr. Moynan will return there, and continue to study the works of the prince of painters. Mr. Osborne, Mr. Kavanagh, Mr. Tisdall, Mr. Moran, Mr. Greene, Mr. Lodge, and Mr. Hill have also been benefiting by their Continental studies, and I am glad to see in their works, as well as those of other young aspirants, that correctness of drawing, as well as attention to tone of colouring, to which I took the liberty of referring here on former occasions, is taking the place on these walls of the crudity and want of care in the delineation of form which used to be prevalent. These evidences of study in the proper manipulation of the pencil and the brush are sure to bring golden fruit to the industrious students ; and the larger view of things in art which prevails in the Continental schools, by bracing the minds and increasing the technical knowledge of those who have the energy to go to learn in them, will, I am certain, enable our Irish artists to raise the standard of excellence here in rivalry with the paintings of any other lands. There is no reason why, with these advantages, Irishmen need despair of rising to the highest level in art, and commanding the picture markets at their own prices, as is done by painters of the first rank on the other side of the Channel. As I have often remarked before, real excellence cannot fail to be appreciated by wealthy amateurs, and I hope to see Irish pictures bringing great sums yet, of the modern school, at London sales, where the works of such Irishmen as Barrett, O'Connor, Patrick Nasmyth, and others always find a ready market. The latter painter's works have now reached a price there which puts him in the same category as the great Dutchmen, Jacob Ruysdael and Hobbema. I saw an exquisite little work of Nasmyth's sold last year at Christie's for nearly 400 guineas, being not more than a foot square, to go into the collection of Mr. Bingham Mildmay, to



hang in his house in Berkeley Square, London, in company with Hobbema, Vandewelde, and Van de Capella, and it holds its own with any of them. Now, as to other matters connected with art in Ireland. The Government purchased at the Fontaine sale in London last summer the reliquary of St. Lachteen, to which attention was first drawn by Sir William Gregory and myself. There was a formidable competitor against Ireland for this in the British Museum, but I am glad to say that the representations made induced that institution to forego its claim to the Government purchase, so that it has come to where it ought to be, in this country. It is now temporarily placed among the collections of similar objects in the Royal Irish Academy, pending the building of the new museum, the first stone of which has been happily inaugurated by His Royal Highness the Prince of Wales. This brings us at last to the actual commencement of the greatest work for the promotion of the arts and sciences which has ever been projected in Ireland. After long discussions and two competitions, we are, I hope, at last on the eve of the commencement in earnest of this most important undertaking; and although the delay has been great, I am sure that in consequence there has been more mature consideration, and we have, at all events, this great advantage, that whereas we had at first only the museum projected, the outcome of it now is that we shall have a complete design, embracing the great National Library and all the other concomitants of a perfect group of structures dedicated to the scientific and artistic interests of Ireland. Not only this, although the comprehensiveness of the scheme is now its happiest feature, but it has been proved by the result of the competitions that Irishmen are able to hold their own in rivalry with others, for I can say this, that of the five selected designs on the last occasion, three of them were by members of this Academy; and, moreover, they were all of such merit that it was not easy to come to a final decision. One thing is now certain, that this great set of buildings will be carried out in all its details under the superintendence of a distinguished Irish architect; and we must hope that Irish builders and Irish workmen, with as much as possible Irish materials, will do the rest. Thus the people of this city and country will erect with their own hands what will, I trust, be the most important engines of civilisation and improvement which this country will ever have possessed. Not only here, but also in London, has the management of this scheme been, curiously enough, in the hands of Irishmen, for the President of the Council on Education is no other than Lord Carlingford, who took the greatest interest in it, as I know from the communications which I have had with him on the subject. One Englishman there was who did, perhaps, more than all to forward it; but that Englishman has devoted so much of his life now to the service of this country—having had the whole government of this island on his shoulders for many years—that he must be getting pretty Irish himself by this time. He bore with the mistakes of the committee in the first competition, and now his attention to the subject is to be crowned with success.

## TESSERÆ.

Wilkie as an Academy Student.

B. R. HAYDON.

THEY all told me there was certainly something peculiar in this new student. Jackson said he drew too square; another said his style was vulgar. "What does Fuseli say?" said I. Fuseli said, "Dere is something in him." I was rather uneasy all night, for Jackson said he had done something from "Macbeth," which all agreed must be a picture in high art. The next day I went as usual, when, in about an hour after we were all drawing, in came David Wilkie. He was tall, pale, quiet, with a wonderful eye, short nose, and vulgar, humorous mouth, with a look of great piercing energy of investigation. In the course of the morning, he began behind me to get into some argument, in a whisper, of which he was always very fond; and after a little, I am proud to say, he got up and quietly looked over me. He then sat down, and I got up and looked over him. However, I am delighted to say, he moved first. The next day we got into a fierce dispute, in which neither gave in, and we went away and dined together. He used to dine at an ordinary in Poland Street, where a great many Frenchmen assembled. Here he got that old man with glasses, reading the paper to himself, in the *Village Politicians*. By the time the vacation commenced, the habit of dining together, drawing together, and arguing had generated a sort of necessity to be together, which insensibly grew upon us. When the Academy closed, Wilkie came up to me and said in the broadest Scotch, "Whar d'ye stay?" and invited me to breakfast. I went to No. 8 Norton Street, knocked at his ground-room door, and a voice said, "Come in." In I walked, and, to my utter astonishment, instead of a breakfast, there sat Sir David, *in puris naturalibus*, drawing himself in the glass! "Good heavens!" said I, "where am I to breakfast?" With-

out the slightest apology for this position, he replied, with the greatest simplicity, "It's copital practice, let me tell you—jist tak' a walk." I took my leave and walked till he was ready. At this first meeting he showed me his picture of *The Fair*. The colour was bad, but the groups exquisite. But I was so full of Raphael, I had a sort of contempt for a young man so devoting himself. The fact was, I did not know enough of art to see its great value. I had a very different opinion when I did.

Venice.

JOHN RUSKIN.

A city of marble, did I say? Nay, rather a golden city paved with emerald. For truly every pinnacle and turret gleamed or glowed, overlaid with gold or bossed with jasper. Beneath the unsullied sea drew in deep breathing, to and fro, its eddies of green wave. Deep-hearted, majestic, terrible as the sea, the men of Venice moved in sway of power and war; pure as her pillars of alabaster stood her mothers and maidens; from foot to brow all noble walked her knights. The low-bronzed gleaming of sea-rusted armour shot angrily under their blood-red mantle folds. Fearless, faithful, patient, impenetrable, implacable—every word a fate—sat her senate. In hope and honour, lulled by flowing of wave around their isles of sacred sand, each with his name written, and the cross graved at his side, lay her dead. A wonderful piece of world. Rather itself a world. It lay along the face of the waters no larger, as the captains saw it from their masts at evening, than a bar of sunset that could not pass away; but for its power it must have seemed to them as if they were sailing in the expanse of heaven, and this a great planet whose orient edge widened through ether. A world from which all ignoble care and petty thoughts were banished, with all the common and poor elements of life. No foulness nor tumult in those tremulous streets that filled or fell beneath the moon, but rippled music of majestic change or thrilling silence. No weak walls could rise above them; no low-roofed cottage or straw-built shed. Only the strength as of rock and the finished setting of stones most precious. And around them, far as the eye could reach, still the soft moving of stainless waters, proudly pure. As not the flower, so neither the thorn nor the thistle could grow in the glancing fields. Ethereal strength of Alps, dreaming, vanishing in high procession beyond the Torcellian shore: blue islands of Paduan hills poised in the golden west. Above, free winds and fiery clouds ranging at their will; brightness out of the north, and balm from the south, and the stars of the evening and morning clear in the limitless light of arched heaven and circling sea. Such was Giorgione's school, such Titian's home.

Restoration.

SIR G. G. SCOTT.

The more of the ancient material and the ancient surfaces remain and the less of new introduced, the more successful the restoration. If more cannot be saved, even one or two old bemossed stones in a window or cornice give value and truthfulness to the work; but when it is possible, all, or the great majority of the old stones should retain their untouched and unsmartened surface, and even where a wall is of necessity taken down, it is often possible, and would be always desirable to rebuild it stone for stone. There is an individual character even in the old ashlar which should not be overlooked, so much so, that in the absence of a single architectural feature the date can often be ascertained by it; this, too, should be observed and respected by the restorer. It is impossible to take too minute care in ascertaining the true original section or mouldings to be restored. Their fine "keels" and other smaller parts are often so nearly erased by weather or friction that they can hardly be distinguished, and sharp arrises are converted into rounded edges, so that without most careful observation of the moulding in every part its true form may not be discovered. Again, the sizes of the stones are an almost essential feature in arches, &c., and, if not attended to, the whole assumes a new and modern garb.

Teaching Drawing.

J. D. HARDING.

The prevalent method of teaching art, which merely places before the pupil something to be copied, exercises the faculty of imitation. This is exactly analogous to, and is attended by no better results than the bygone system of general education, now almost obsolete, wherein, whatever the subject, the pupil was merely called upon to commit a certain portion to memory. He who could deliver it from his tongue most correctly and most glibly, was voted the best scholar; few, if any, critical questions are asked. Under this *régime* every power save memory was hushed, no call was made on the intellectual faculties; talent was smothered or entombed, unless it had sufficient innate power to deliver itself from the somniferous or sepulchral load. Seeds were thinly scattered, and a harvest was altogether wanting. An attempt to teach art, by requiring the pupil patiently and minutely to copy the example set before



him, leads him as far away from its attainment as he would be led from the attainment of the Greek language were his tutor first to require an exact copy of the character of its alphabet, then of the words, and finally of a whole sentence. When able to do this without mistake, he would be as near to a knowledge of the Greek language as the like means would bring him to a knowledge of art.

#### Roman Rings.

E. WATERTON, F.S.A.

There is no nation with whose individual and personal history the finger-ring is so closely connected as the Roman. At first the Romans wore rings of iron, the gold ring being given to those senators only who were sent abroad as ambassadors; then it was adopted by the senators. Under the republic and the empire its use was regulated by laws. The ring of gold was the sign of equestrian rank, and the *jus annuli aurei* became the height of a Roman's ambition. Prætors and quæstors had the right of conferring the *jus annuli*. In later times the privilege was much abused, and in consequence the distinction became depreciated in public estimation. Then the use of rings became immoderate in number, and inconvenient in size. People no longer contented themselves with one ring; they sometimes wore rings on every finger, and even on every joint. One Charinus, according to Martial, wore daily a little matter of some sixty rings, that is, six to every finger, and what is more remarkable, he loved to sleep in them. They seem to have chosen, at pleasure, the devices or subjects for their rings—some wore the portraits of their ancestors, or the representation of some event connected with their personal history, or that of their family. Every man's signet was his ring; the impression of it was affixed to all official acts and deeds. Hence Cicero, writing to his brother Quintus, governor of Asia Minor, admonishes him to be careful in the use of his signet. The circumstance that not merely individuals but states had their seals, perhaps explains the great correspondence of many gems in rings with coin types. Roman rings occur of gold, of silver, of iron, of brass, of ivory, of lead, of amber, and of glass, and of one piece of stone.

#### Equestrian Statues.

THOMAS DE QUINCEY.

Till very lately, the etiquette of Europe was that none but royal persons could have equestrian statues. Lord Hopetoun, the reader will object, is allowed to have a horse in St. Andrew's Square, Edinburgh. True, but observe that he is not allowed to mount him. The first person, so far as I remember, that, not being royal, has in our island seated himself comfortably in the saddle, is the Duke of Wellington.

#### Pentelic Marble.

KARL FIEDELER.

It is a common remark that the marble of which the Temple of Theseus at Athens is built was covered by the ancients with a yellow varnish that had the appearance of gold. To this I reply that the Pentelic marble, which has preserved its polish for more than two thousand years, has without a dispute a yellowish glittering surface as though covered with fine gold leaf, and this may be seen in a very beautiful manner at sunset. But it proceeds only from the continued influence of the atmosphere, to which the stone is indebted for the treasured tint—a sign of its great antiquity. The same is observed on the Parthenon. Dodwell calls this yellow appearance a golden patina. The Pentelic marble of itself has a strong tinge of yellow, but the phenomenon above mentioned can only occur on a well-polished surface, and is therefore never seen on the rough fracture of the quarries.

#### The Elements of Design.

RICHARD REDGRAVE, R.A.

In considering the elements of style, it must be remembered that style is not merely governed by decoration, as is too often supposed, but originates in construction, to which decoration is only subsidiary, and the great eras of style have been noted by eras of changed construction. The moundlike temples of Egypt, the horizontal constructions of Greece, the arched vaultings of Rome, the vertical aspirings of Gothic buildings, contain as marked elements of style in their bare walls as when in their completed state they were covered with the rich decorative treatments peculiar to them. It will follow, first, that style implies some dominating influence reflecting the mind of the age in all its works, and therefore presumes a certain unity of character throughout. Secondly, that the primary elements of style are constructive; and that the design of a work must have regard to construction, and consequently to proper use of materials prior to the consideration of ornamental decoration. Thirdly, that as construction necessarily implies a purpose, utility must have the precedence of decoration. Fourthly, as construction necessitates a proper consideration of materials, and as each material has its own mode of manipulation and is wrought by separate and varied processes, design must be bad which

applies indiscriminately the same constructive forms or ornamental treatments to materials differing in their nature and application. Fifthly, that as the greater regulates the lesser, the building should determine the style, and all which it contains of furniture or decoration should conform to its characteristics, and thus there would be a proper conformity of style throughout, and a subordination of all the inferior objects to one another and to the whole.

#### Origin of "By-law."

PROFESSOR A. S. WILKINS.

Wherever you find places ending in *by*, as Whitby, Derby, Rugby, there you find Danes have been. *By* is the old Danish form for town or borough; and when you talk about "by-laws" you simply mean the borough laws as distinguished from the laws of the country. Of course now we use the phrase for the laws of a railway or a club, but originally "by-law" meant borough law as distinguishing it from the national law of the Great Parliament. Here you find lots of *bys*, and here lived the Danes; there you will find *tons*, and English folk settled there. In Lancashire you will find *bys*, as Crosby, Formby, in the West Derby Hundred, and so on. That means that the Danes, sailing round the country with their ships, came and settled just on the sea-coast, but could not get any further inland, because the English people drove them away.

#### Nielli and Engraving on Precious Metals.

J. WHITE.

The small silver or gold plates which require to be engraved are fastened, by means of a cement composed of resin and brickdust, upon a flat piece of wood, by which means a sufficient rest is obtained for the thumb of the engraver, which in this species of engraving sustains and steadies the hand. The burin or graver is grasped by all the fingers of the right hand, and, by a full pressure on the thumb, the artist is able to perform any operation with steadiness to the extent of a circular line of about six inches in length. The engraver, elevating his hand, has an entire control of the instrument, and works with equal certainty as upon a flat or convex surface. Indeed, a surface of much convexity is only safe in the hands of a skilful and experienced engraver, and no tyro would dare to attempt a bread-basket which is required to be engraved at the bottom, because the hand has to be elevated so as to place the graver almost upright, while the thumb solidly serves as a supporting pillar to the hand while the tool ploughs out the metal as the skill of the workman directs. The instruments generally used for this work are square, but are varied to different angles, and are termed the square graver, half lozenge and lozenge graver, the flat-scooper and the spit-sticker. The practice I have described is, generally speaking, as much unused, perhaps unknown, by those who are now called historical or landscape engravers, as the art of chasing is unknown to, or not practised by, silver engravers. I am entirely satisfied by the conviction which has been produced by knowledge and experience, that in this way and by this process did Maso de Finiguerra, and all the primitive goldsmiths, produce the impressions which are now denominated "Nielli," from the subsequent process of filling them with the substance described by Vasari and others.

#### English v. Flemish Bond.

GEORGE HOWELL.

The English workmen pay great attention to bond, and pride themselves upon its perfection. Many architects and clerks of works select old English bond for heavy buildings on account of its superior strength. I cannot, of course, deny that its strength might exceed that of the Flemish bond if carried out in all its integrity, but this I affirm, without fear of contradiction, that the Flemish bond is equal to every possible and impossible emergency. I defy any architect to point out any one instance of its failure to sustain, without fracture, any superincumbent weight or pressure ever brought to bear upon it. The reason of failure, when any such has taken place, is not the weakness of the style of bond, but the want of bond by snapping header after header, sometimes for whole courses, in order to save a few front bricks, whether red rubbers or malms. If the courses are laid regularly and fairly, the headers being properly and constantly placed their whole length in the wall, it cannot fail; I defy it to do so. Nevertheless, the old English bond should always be used in rough work inside and outside, as it is a little quicker in practice, and all the "bats" can thereby be used up with facility. And in this there is no fear of failure with regard to strength, as walls never split or separate in the centre; their fractures are generally due to the foundations, for a heavy pier will settle more than a light one, and hence it frequently happens that the fracture takes place through the arches of windows or doors. If I were asked whether the old English bond or style cannot be made to look well for front work, I would answer yes. But it will always look heavy and confused; it can never have the light appearance of Flemish bond.













# *Arcadia!*

*By D. P. Prud'hon.  
From a Reproduction by M. Achille Fourny*



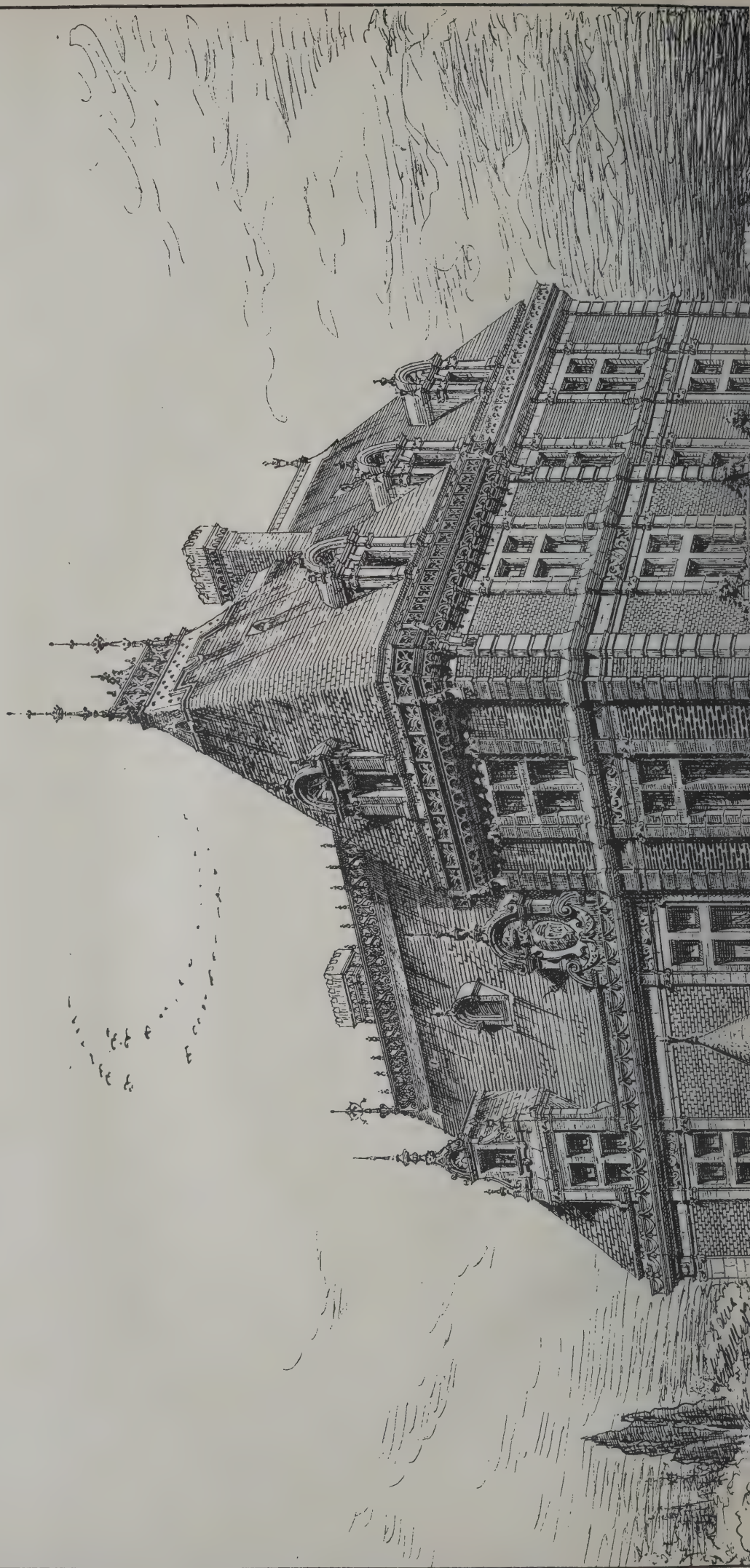




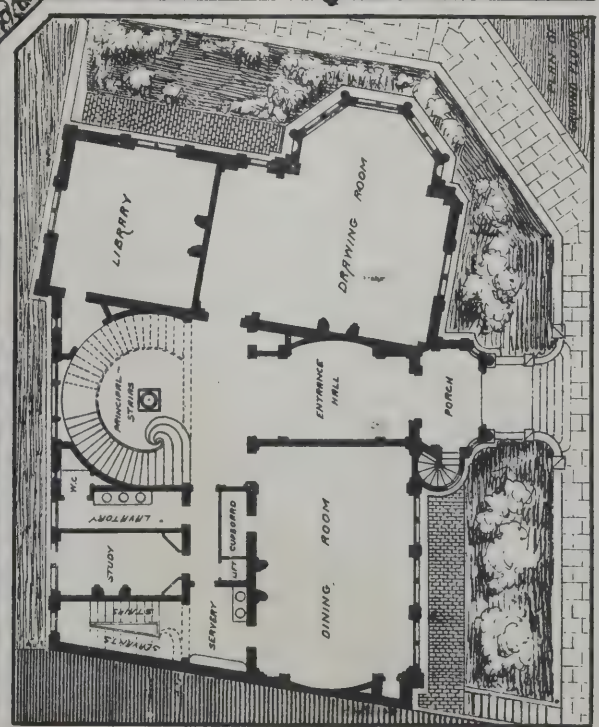
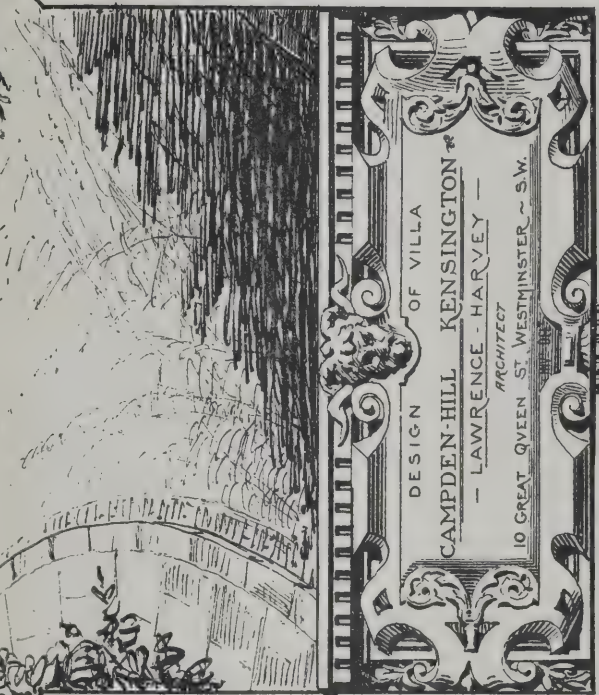
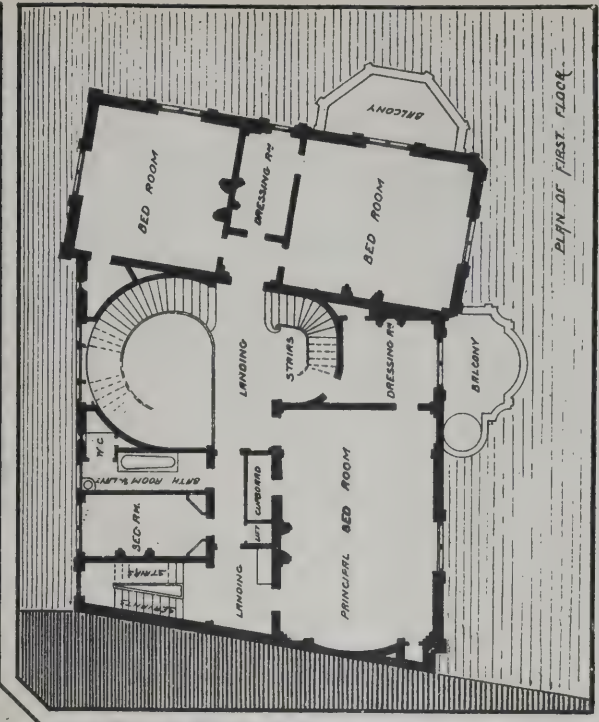




The Architect April 25<sup>th</sup> 1885.







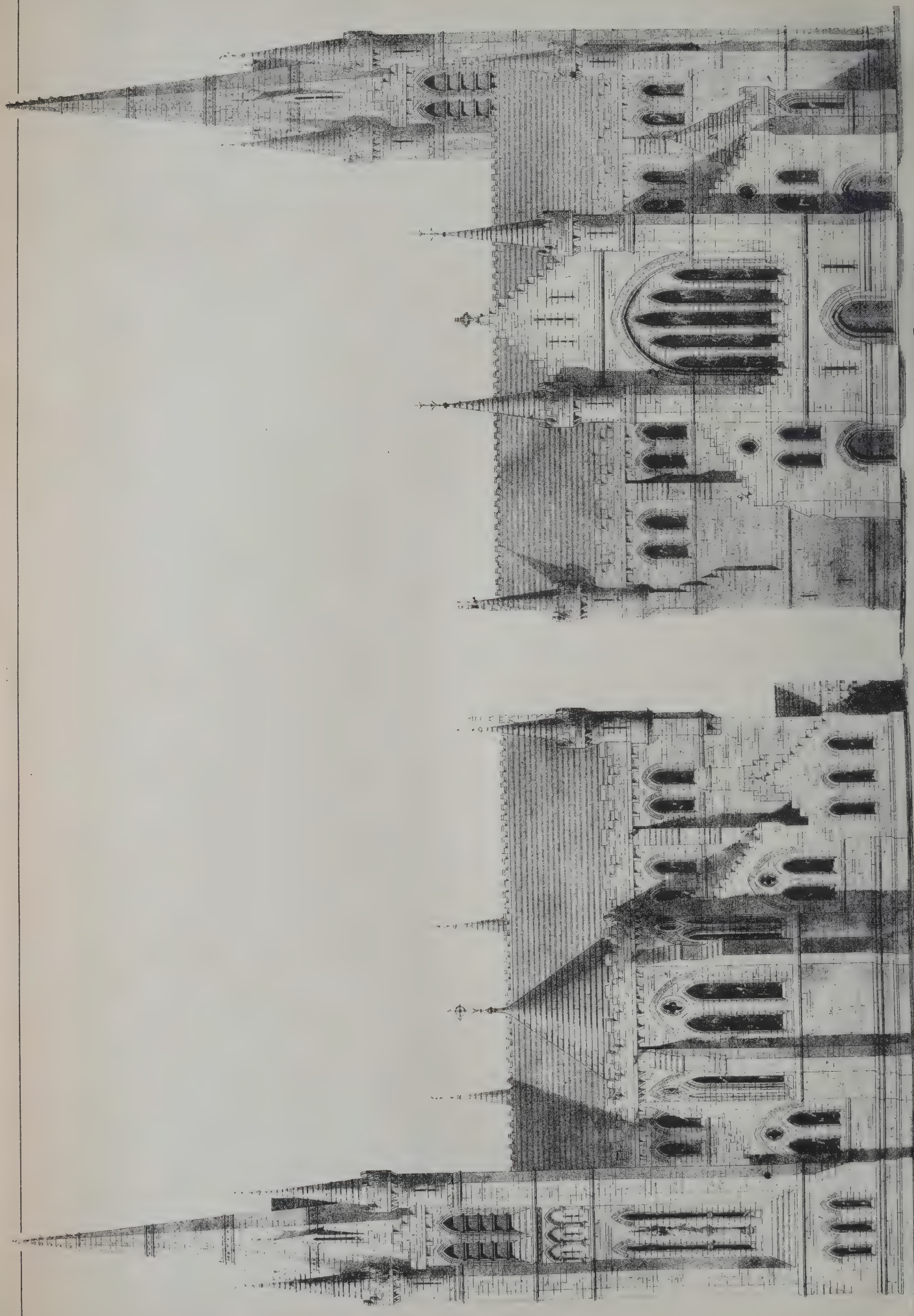












WEST ELEVATION.

EAST ELEVATION.





SOUTH ELEVATION.

O'CONNELL MEMORIAL CHURCH, CAHERCIVEEN, CO. KERRY.  
THE VERY REV. CANON BROSNAH, P.P.







## ILLUSTRATIONS.

ARCADIA (VENUS AND ADONIS).

THE admirers of PRUD'HON form two camps. According to the firm belief of one party he was the greatest of all the painters of *amorini*, surpassing RAPHAEL himself. And when we look at the delightful friezes made up of infantile actors and actresses, that belief appears to be well founded. There is nothing to suggest the infant phenomenon of the circus among his numerous figures, or the precocity that is seen in the gardens of Paris. In the other camp, PRUD'HON is venerated as a professor of high art, whose religious pictures and allegorical pieces are inspired by the spirit of the sixteenth century. M. SIROUY, in undertaking the translation of a work of the *Venus and Adonis* type, appears to have been attracted by the former belief. It is one of those idyllic pictures by PRUD'HON which QUATREMÈRE DE QUINCY described as a combination of the purity of antique contours with the grace and softness of CORREGGIO.

PIERRE PRUD'HON was not one of the fortunate painters. His father, who was only a working mason, died when PIERRE was an infant. He was homeless when the monks of Cluny took pity on him. The pictures on the walls of the convent impressed him so strongly that he was able to draw almost as early as he could read. He found a patron in the Bishop of MAÇON, by whose aid PRUD'HON was removed from Cluny and sent to a school of painting in Dijon, of which DEVOSGES was director. He married when he was only nineteen, and from that time until his death was unhappy. So many cases of the kind have occurred, it is not surprising that Sir JOSHUA told young FLAXMAN, when he heard of his marriage, that he might look upon himself as ruined.

PRUD'HON made his way to Paris in 1780—he was then in his twenty-second year—where he designed for engravers. He still continued to study. A prize was offered by his province for which he competed. It suggests the artist's generosity when we hear that finding a companion regretting his inability to complete his picture, PRUD'HON took up the canvas, and put so much of his own grace into the figures as to gain the prize for that work instead of for his own. According to the story, the rival was overcome by friendship of so antique a character, and declined to accept the prize. It was assigned to the rightful winner, and enabled him to travel to Rome.

PRUD'HON made a friend of CANOVA, who desired to keep him in Rome. But, after about seven years of studying and copying, he returned to Paris. It is nearly as difficult for an artist to succeed in France without the aid of friends or of cliquism as in England. PRUD'HON might have starved as a painter, and it was only by resuming his occupation of making designs for engravers and work of that class that he could find a living. If it be remembered that the tragic scenes of the Revolution were then being enacted in Paris, the graces and cupids of PRUD'HON become rather remarkable as the product of the time. Some of his designs were commended, but the city was not in keeping with his mind. PRUD'HON next sought patrons in the provinces as a portrait painter. He was fortunate in obtaining an introduction to FIRMIN DIDOT, the head of a family whose name is associated with the production of books that are remarkable for typography and illustration. Many of PRUD'HON's finest designs were produced for that printer. Through the friendship of M. FROCHOT, the Prefect of the Seine, he obtained a commission for a painting having for subject *Crime Pursued by Justice and Vengeance*, which was expected to strike terror into the souls of any criminals who found themselves in the court where it hung. This work, which is now in the Louvre, was carefully thought out, as may be seen from the drawings, in PRUD'HON's most finished style. But it is open to the objection of being partly real and partly ideal. The criminal appears to have been taken from one of the portrait busts of the Roman emperors.

A subject better adapted for a painter with so much of what the old critics used to term "correggiosity" was found in *Wisdom Guiding Truth*, which for a long time adorned a ceiling at St.-Cloud. Another work of the same class is the *Diana Imploring Jupiter*, in which the goddess seeks to be preserved from subjection to HYMEN. It forms a part

of the ceiling in the Salle Diane of the Louvre. Pictures of that class, in which goddesses, nymphs, and cupids had to appear, were best suited to his pencil.

Two works in a different style should be named. In 1816 a painting of *The Assumption*, for the chapel of the Tuileries, was ordered from PRUD'HON by the King. The price was 6,000 frs. But in 1843 a sketch for the work was sold to the late Marquis of HERTFORD for double that sum. It is now with five other works of the painter in Sir RICHARD WALLACE's splendid collection. A commission for a *Crucifixion* was afterwards given by the Minister of the Interior. It was intended to be placed in the cathedral of Metz. The work was destined to be his last, for PRUD'HON died in February 1823, three days after its completion.

COUNT DE CLARAC says that PRUD'HON looked on nature with the eyes of CORREGGIO, and was inspired by a similar ideal of beauty. The charm which his figures exhibit, the soft *abandon* of their attitudes, and the peculiar sweetness of their countenances, recall the Italian master. At the same time it must be acknowledged that PRUD'HON was not the equal of CORREGGIO as a colourist. He is too often cold, and is lavish in his violets and yellows. It is also objected that he was over fond of elegance, and that all his figures appear to belong to one family. PRUD'HON was a dreamer and a poet, and the whole of his pictures are suggestive of an ideal world into which, happily for himself, he was able to ascend. He and his followers are a sort of standing protest against modern realism in France, and the criticism which cavils with PRUD'HON is no less applicable to COROT.

## A LONDON MANSION IN FRANCIS I. RENAISSANCE.

WE publish this week a design of a London mansion, in French FRANCIS I. Renaissance. It is the author's belief that of all the styles of French architecture this is the most adaptable to English dwellings. The very laxity of the style, which is neither Classic nor Gothic, but a mixture of both, allows of the greatest freedom in meeting all the requirements and even caprices of private persons. On the other hand, it is a style born in purple, its first appearance being connected with the palaces of a king and the castles of a refined nobility, whereas Queen Anne and Old English timber-work have sprung from a humbler source—the farmhouse and the cottage.

Mr. LAWRENCE HARVEY, the author of this design, has studied architecture in the Ecole des Beaux-Arts, where the traditions of symmetrical planning prevail, and the effects of this training may be seen in the vistas of halls and staircase, which will no doubt form a striking feature of his building; but in all other parts there is the suppleness of an English plan where comfort and convenience alone seem to reign. The exterior, with its high-pitched roofs, its variety of cornices, balustrades, and carved work, may suggest the richness and dignity of the Early French Renaissance, and excite a desire to see many more buildings erected in so noble a style.

## THE O'CONNELL CHURCH, CAHIRCIVEEN.

WE publish two more of the drawings of the Memorial Church designed by Mr. G. C. ASHLIN, A.R.H.A. The perspective views appeared on March 28.

## MILLET AND MODERN ART.

THE second of two lectures on "Jean François Millet and Modern Art" was delivered by Professor Baldwin Brown at the Scottish Atelier Society's rooms on Saturday. It was said that the greatness of Millet was due to his grasp of the fundamental truths of art, which are the same in every age. There is no modern "royal road" to artistic achievement. All solid work in art, however modern in feeling it may be, must be done in accordance with the old principles which were illustrated most clearly in the best work of the seventeenth-century painters. On some of these painters he hoped to deliver some occasional lectures next winter. They possessed the secret of solid, unpretentious work, which had yet upon it the stamp of style and true artistic quality. This secret had been to a great extent lost in modern times, and the art of our day was liable to



fall into the commonplace, or, if it aimed at style, to become showy and theatrical. Going on to review the modern schools, he suggested that they might be marshalled in two divisions—those of the Teutonic peoples, and those which grouped themselves round Paris as their centre. The work of the former was quiet, that of the latter, though often brilliant, was restless and superficial. The British school occupied a place somewhat apart, through the absence in it of old artistic tradition. This was in part a benefit, as it secured freshness and variety in work, but in part a disadvantage. To the want of it was largely due the comparative failure of our painters in figure pieces on a monumental scale. The method of carrying out a large subject picture was far better understood in the Continental schools than here, through the continuity of tradition which some of them had maintained from Renaissance times. The old masters were more studied by young German artists than by our native students, and the good result of this study, in solidity of technique and an appearance of style, was shown in some of the works of the younger Munich school. In contrast to the quiet distinction of some portraits by F. A. Kaulbach, attention was called to the flimsy and commonplace work which appeared occasionally in places of honour at Burlington House, and reference was made to the evil effect upon some of our painters of becoming mixed up in the fashionable world. The modern French school was then briefly reviewed, and the chief kinds of work represented in it were illustrated by photographs. The landscape school, associated with the names of Rousseau and Jules Dupré, was traced back to the influence of works of Constable exhibited in Paris in 1824. Like Constable, these painters represented nature not in detail but in general effect. They were content with the subjects which lay nearest to them, but strove to make the very most of them through subtle rendering of tone and strength of handling. The prevailing fancy among French landscape painters of the day for large canvases was shown to be a departure from the better taste of Millet, Rousseau, and their associates. After a few words on the German school, the lecturer proceeded to his concluding remarks. Art, he said, is no mere exhibition of skill, but a serious function, which should make a demand upon the thought and feeling of the artist. He is the greatest artist who reads most deeply into nature, and gives out what he sees in forms of the highest and most permanent value. The painter who has the highest conception of what art ought to be will be most surely preserved from the danger of sinking into a worshipper of "Chic," or a mere drawing-room artist. Art would have the best chance of rising to higher things in a school which is strong enough to preserve throughout its independent, national character, but in which the artist accustoms himself to raise his ideas and solidify his practice by a reverent study of the lives and works of great artists, whether belonging to bygone ages or, like Millet, to our own generation.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS

THE tenth ordinary meeting of the Institute of Architects was held on Monday evening, Mr. Ewan Christian, president, in the chair. A list of nominations for membership was read.

Mr. ARTHUR CATES noticed that the list of men who had passed the examinations just read showed how much provincial men esteemed the advantages of the examinations. He hoped such an example would have weight with the young men in London, and bring them forward as candidates for membership increased in numbers and in merit.

The PRESIDENT hoped the young architects in the metropolis would duly attend to what Mr. Cates had said.

### Notes on Flint-work.

Mr. BAGGALLAY read a paper on this subject, with special reference to the county of Suffolk. As a student, he claimed indulgence for bringing forward the paper, which he should not have done except by request of Mr. White. The subject had been suggested by a visit to the picturesque town of Norwich, where he had examined twenty churches, all of them faced with flint-work. The greater number of buildings he had examined were, however, in Suffolk. The subject had often been alluded to, but, well known as it was, it never seemed to have been treated as exhaustively as it deserved, when it was considered that it was an English development of architecture. He argued against the idea that a sham or any untruth was involved because with flint-facing the wall was not of one material throughout. No one supposed from seeing a green meadow that the globe was made of grass, or that the bark of the silver birch was anything more than the covering of the tree, &c. His idea was to build the wall its proper thickness, and then to face it. The treatment would be used for monumental buildings, and not so much for domestic buildings, where it might be inconvenient on the score of cost, or for other reasons. Flint was one of the hardest and most enduring materials,

and if it could be worked with reasonable facility, it would beat, he thought, all other materials out of the field. The flints were described, and their use from simpler to more elaborate and decorative purposes in pattern, &c., remarked on, and "garotting" or filling up the interstices with splinters of flint alluded to. The round towers were among the earliest of flint construction, and the roughness of the work suggested to him that it might have been intended to finish them off with stucco. He thought that flints had first been used more as rubble, and the date of the work of the churches pointed to the fifteenth century as the time of a more elaborate work. The decorative character of the flint-work was then considered in detail, and instanced by examples quoted.

Mr. Baggallay concluded his paper by remarking that it was unnecessary to argue in favour of the occasional adoption in these days of cut-flint facing when the opportunity occurred, if only for the sake of a little variety. It was sufficient to point out that, if plenty of long banders, either of the flint itself or of stone, were used, the work was perfectly sound, and also that if it were once granted that facing was at all permissible, then for concrete walls what facing could be better than random-faced flint? The material would be the same, or very similar, only of a better kind, to that of the body of the wall, and the large quantity of mortar used would cause it to settle almost equally. In regard to the flush panelling, a great deal of which would necessarily be executed in gauged work, the list of prices he had collected showed that the cost would be prohibitive. From the point of view which he had attempted to show to be the right one—that surface architecture was not only no sham but the most sensible and artistic—it needed no other recommendation than its own intrinsic beauty for its revival. Apart from mere revival, which was, in truth, but a backward step, it was surely capable of development, or, at least, of affording a few suggestions for those who are desirous to carry art onwards. The most obvious of these was the substitution of other materials than the flint. Not to speak of gauged brickwork, which, treated in that way, would be at least as beautiful, there were varieties of marble at command, at prices certainly high, but not, in these days of cheap carriage, altogether prohibitive. And in what way could marble be more appropriately applied to buildings than in slabs, cut to a form which did not suggest joinery, or any other material, and tied in the body of the wall by the stone frame which surrounded it? for of course we should not be guilty of imitating the fourteenth century to the extent of making that too merely superficial. Then in a similar way decorative panels could be used, appropriate to the external decoration, like those of della Robbia. Was it quite impossible to sink the panels slightly and decorate them with frescoes? He would even dare to suggest that a modern building, decorated with well-designed tracery of the kind, executed in white marble, delicately moulded and the ground filled with mosaics, would rival in richness, and might easily be made to surpass in beauty, the gorgeous fronts of Siena and Orvieto cathedrals. Or a less extravagant proceeding would be to use or develop such banded work as that of Clyffe. The bands might be of a variety of materials, stone and flint, brick and flint, brick and terra-cotta, brick and faience, &c. And any one who knew the beautiful effects of the banded work of the various Italian buildings, would confess that it would be worth more than a mere trial. Probably some might be thinking that these were impracticable suggestions. There would be of course two difficulties in carrying them into practice—one to get even however short a distance out of the old grooves: and the other to find a public who would appreciate or pay for efforts to give them something worthy of the great, wealthy, and go-ahead nineteenth century. But difficulties should act as a spur to their efforts, and he hoped at least that the matter might receive consideration.

Mr. COLE A. ADAMS proposed a vote of thanks to Mr. Baggallay for his paper.

Mr. CHARLES BARRY, F.S.A., who seconded the vote of thanks, said the paper was on a subject which he thought had not received anything like extensive study on the part of the profession, partly from the want of demand, if he might venture to put it in that way, for the particular kind of architecture which the use of flint-work had illustrated. Mr. Baggallay had drawn attention to one of those particular studies and phases of the working part of the profession which deserved more study and attention than it received. The flint architecture of this country might well be made the subject of a future essay. He was open to correction, but his impression was that flint-work was a national phase of architectural development, and that, except in England, it was almost unknown, and therefore a matter which English architects should study particularly. Another point he would advert to was the peculiarity that flint architecture, at any rate in anything like the development referred to by Mr. Baggallay, existed only in the East of England; whereas chalk formations bearing flint strata were common to different parts of the country. In the county of Sussex there were examples of flint churches, but they had not received the same artistic treatment



as churches in the eastern counties. This was curious, and worth being inquired into. He thought the conclusion to be drawn was that there must have been some great object attained by the architecture of the fifteenth and sixteenth centuries in the use of flint. The greater study given to colour decoration at that period might explain that object. Economy would, he thought, not account for it, as the flush-panels, &c., were not at all economical. He, therefore, thought it must have been for the sake of colour. In the paper one point, somewhat foreign to the subject, was as to the decrying of English architecture for the comparative inattention shown in the smallness of the church entrances. He ventured to think this was far from being a defect, and that the unity and majesty of a well thought-out composition would be seriously interfered with by a different treatment. English architects acted quite properly when they avoided exaggerating any feature, whether door or window, so as to sacrifice unity as a whole.

Mr. WM. FAWCETT considered there was a great difficulty in former days in obtaining stone in Suffolk. As to sea-carriage, that county was practically more inland than Sussex. He said he could testify to there having been a great deal of colour, which was now lost.

Mr. L. W. RIDGE spoke of the round towers near Lewes, where money was always more or less short and stone scarce, though not so scarce as in the eastern counties. Consequently flint might have been used.

Mr. ASTON WEBB mentioned a house of Mr. Edis's at Brighton, as a very charming example of the legitimate use of flint work.

Mr. J. FOWLER, of Louth, attributed the use of flint, in the counties of Norfolk and Suffolk, to the enormous wealth of those counties, and to the desire to display that wealth to the glory of God. The district was, they knew, totally devoid of stone. As to flint works in Sussex, the chalk formations contained scarcely any flint. He only wished, for the sake of architecture, that this geological formation were more commonly to be found in the country.

The PRESIDENT considered a right explanation had been given by attributing flint work, as seen and used in East Anglia, to the wealth of that rich manufacturing district, for the carved woodwork equalled anything that was to be seen in the West of England. The President spoke of the extraordinary tenacity of flint work when properly constructed, and how, in a former generation, the rector of Cromer Church (possibly to avoid the expense of a new roof) had petitioned for leave to pull down the chancel because, as he alleged, it was likely to fall down. It was a most infamous act. The walls had to be destroyed by gunpowder to get them down. From an examination of the ruins he (the President) had been able to reconstruct the chancel, mentally, exactly in its original state, the remains, though broken up, being so perfect and so sharp in detail. Notwithstanding the small size, at the most moderate estimate a restoration would have cost 10,000*l*. A better material than flint for building could not be found. The work must, however, be done properly. It must be built slowly and only in the finest weather.

The vote of thanks having been awarded, Mr. Baggallay acknowledged the compliment, and the proceedings terminated.

## EDINBURGH ARCHITECTURAL ASSOCIATION.

THE members of this Association, to the number of 110, visited the Forth Bridge and Rosyth Castle on Saturday. The party arrived at North Queensferry about one o'clock in the afternoon, and took advantage of the opportunity afforded them of inspecting the Forth Bridge works on that side of the channel. At half-past three the excursionists left on board the steamer for Rosyth Castle, which is situated on the north side of the Forth, about two miles to the north-west of North Queensferry. On arriving in the bay opposite the castle, the party were landed by means of boats, and, after an inspection of the ruins had been made, Mr. James Gordon read a paper descriptive of the castle. The castle, he said, anciently belonged to a branch of the great family of Stewart, descended from James Stewart of Durisdeer, brother-german to Walter the Great Stewart of Scotland, father to Robert II., the first of the family who ascended the Scottish throne. Robert the First, Steward of Rosyth, was killed at Shrewsbury in 1409, and it might be assumed that the castle or keep was built prior to that date. The plan and construction of the keep also led to the conclusion that it must have been built in the end of the fourteenth or very early in the fifteenth century. Additions and alterations were made in 1561 and 1639. Sir Walter Scott, in "The Abbot," alluded to the castle, the lord of which, he said, discharged a culverin from the battlements at Lord Lindesay and his party who were on their way to Lochleven. Queen Mary, it was said, slept in the castle on the first night after her flight

from Lochleven when on her way to Glasgow. There was a tradition that the grandmother of Oliver Cromwell was a daughter of the laird of Rosyth, and was born in the castle, and that the Protector himself slept in it after the battles of Pitreavie and Inverkeithing, which were fought between the Royalists and Roundheads in 1651. The family of the Steward of Rosyth continued to flourish till about the beginning of last century, when, according to Sibbald, the last laird dying without issue, disposed the estate to a stranger, by whom it was sold to the Earl of Rosebery. It was now in possession of the Earl of Hopetoun. The original keep was L-shaped on plan, with a circular newel staircase, about 10 feet in diameter in the shorter arm, giving access to the various floors and to the battlements. It was divided in its height into three sections by two vaults. The lower section was further divided by a wooden floor, which was carried on stone corbels built into the walls, the vault over being of segmental form. The great hall entirely occupied the intermediate section, having a semicircular vault, and the top section was divided, as in the lowest, by a wooden floor which was carried on corbels. The roof must have been of wood construction, and was probably covered with shingles or slates. It was said that a causeway and drawbridge at one time connected the promontory on which the castle stands to the mainland. About a hundred yards to the east of the castle was a very interesting columbarium or pigeon-house. After photographs of the castle and party were taken, the homeward voyage was commenced, and after a smart run, the steamer sailing round Inchgarvie on the way, Leith was reached about seven o'clock.

## RICHARD ANSDELL, R.A.

THE death of Mr. Richard Ansdell, R.A., which occurred on Monday morning at his residence, Collingwood Tower, Farnborough, Hampshire, deprives Lancashire of one of the best-known of her artistic sons. He was born, says the *Manchester Guardian*, at Liverpool in 1815, and was educated at the Bluecoat School. His artistic instincts were early developed, and in place of devoting himself to commerce he turned his attention to animal painting. He was fortunate in having the encouragement and patronage of the Earl of Derby, whose love of zoological science was shown by the formation of the famous Knowsley Menagerie. From these animals Ansdell made numerous drawings, which were characterised by facility of execution and skill in seizing upon points of expression. He managed to give something of value even to commonplace subjects, and publishers were ready to engrave his paintings of coursing meetings and similar gatherings more satisfactory to the sporting public than to the lover of the picturesque. His largest achievement of this nature is a huge picture of a meeting of the British Agricultural Association, which includes portraits of about a century of bucolic notabilities. His early works were sent to the Exhibition of the Liverpool Academy, and attracted considerable approbation, in spite of some noticeable defects. There are six of his paintings in the gallery at Knowsley. In 1840 he made his first contribution to the Royal Academy, when *Grouse Shooting* and *A Galloway Farm* were exhibited. These were the property of the Marquis of Bute. Since then above a hundred of his pictures have appeared at the Royal Academy, and about thirty were exhibited at the now defunct British Institution. Amongst these we may name his *Death of Sir W. Lambton at the Battle of Marston Moor* (1842), and the *Battle of the Standard* (1848), both remarkable for the dramatic vigour of treatment. The last-named was immensely popular. It represents the famous episode at Waterloo, when Ewart, of the Scots Greys, bore away the colour of the Lancers. Ewart, who was as modest and unassuming as he was brave, passed the latter part of his life in this district. Some of Ansdell's paintings of animal life were as popular as those of Landseer, whose work they resembled in picturesque power. Typical of this class are *The Stag at Bay* (1856), and *The Combat* (1857).

Mr. Ansdell left Liverpool about 1845 for London, and in 1850 worked for a time in conjunction with Mr. Creswick. The result of this artistic co-operation was seen in *The South Downs* (1850), and *The Park* (1855). This method of partnership was not at all uncongenial to Ansdell, who produced *Feeding the Calves* (1855) in conjunction with Mr. Frith. The most important fact in his artistic career is that after his style might have been supposed to be fully formed, it was considerably modified by the influence of Mr. John Phillip, R.A., with whom he journeyed to Spain in 1856. This was the first of several artistic journeys to the sunny South, and observations of brighter skies and richer colours now took the place of the sterner colours and harsher outlines of these northern landscapes in which he had previously delighted. To these *cosas de Espana* belong *The Water Carrier* (1857), *The Flower Seller* (1859), and many others. But he never entirely abandoned the themes by which he had first gained his fame, as *The Lost Shepherd* (1860), and *Buy a Dog, Ma'am?* (1860)



show. His latest works include *Feeding the Goats in the Alhambra* (1871), *The Anxious Mother* (1875), *The Home of the Red Deer* (1877), and many others.

He was elected A.R.A. in 1861 and R.A. in 1870. Another notable distinction was the gold medal at the great Paris Exhibition of 1855 for his pictures of *The Wolf Slayer* and *Turning the Drove*. It is pleasant to think that Ansdell's merit was early recognised by Manchester, where he thrice received the Heywood gold medal—in 1846 for his *Returning from the Deer Stalking*, in 1847 for *The Chase*, and in 1848 for *The Duke of Montrose's Retreat*. *The Chase* is now the property of the Manchester Art Gallery.

Two only of his pictures appeared in the Art Treasures Exhibition of 1857, one a view of *Lytham Sandhills*, and the other *Returning from Labour*, in which the influence of Phillip was already seen. In 1863 he painted *The Hunted Slave*, a vigorous and almost sensational representation of a slave brought to bay and defending himself with an axe from his ferocious pursuers. This was his munificent contribution to the Lancashire Distress Fund, and it has now an appropriate place in the art gallery of his native town. When the Children's Hospital Bazaar was held in Manchester—probably the most successful ever organised—Ansdell contributed to it a characteristic painting of a dog, whose mute appeal was not the least effective of those addressed to the public on that occasion.

He was an etcher as well as a painter; and here we may quote the opinion of Mr. Hamerton, who says:—"Ansdell is a very accomplished artist, and when he does not think about etching at all, but simply sketches as he would with a finely pointed pen, he does work of a certain value, which value depends upon his knowledge of animals and not on his knowledge of etching, in which he does not appear to be especially interested." But he gives high praise to Ansdell's etching of *The Sentinel*, which he rightly calls a "magnificent study of a stag."

Ansdell had the English love of animals and of outdoor life. He had a keen appreciation of varied aspects of nature, and a genuine knowledge of the ways of dogs, and sheep, and stags, and other animals, that make by their intelligence and usefulness claims, not always recognised, upon the kindness and humanity of man. It may perhaps be said that if there had been no Landseer there would have been no Ansdell, and in a certain sense it is true; but Ansdell was no mere copyist, and with the exception of Landseer no English artist has so thoroughly understood and interpreted the lives and thoughts of "our poor relations" of the animal world.

## THE GLENGALL BUILDINGS.

ON Monday afternoon the Earl of Harrowby presided at the opening of a new Coffee Tavern and block of workmen's dwellings erected by the Messrs. Chubb, the safe and lock manufacturers, in connection with their works, Glengall Road, Old Kent Road. His lordship was supported by the Earl and Countess of Aberdeen, Sir R. A. Cross, M.P., Mr. A. M'Arthur, M.P., and other gentlemen. The buildings were lately illustrated and described in *The Architect*, and have been carried out from the designs of Mr. E. Hoole, F.R.I.B.A.

The Earl of Harrowby opened the proceedings by reading a letter from the Earl of Shaftesbury, who expressed regret at his inability to be present. Lord Harrowby said that the problem which Messrs. Chubb were attempting to solve was not merely to provide a place of recreation and entertainment for working-men, but, what was of greater importance, to "house them healthfully and comfortably." The difficulty was one which had been experienced not only in England but in France, where the social conditions were entirely different, and also in the United States, and in all countries it would have to be grappled with. He was satisfied that in this country our only hope of maintaining commercial superiority was in capital and labour, landlord and tenant, employer and employed, pulling together.

Sir R. A. Cross, M.P., said the question of housing the working classes was one to which for some years he had paid great attention, and though success as yet was only very partially attained, some 22,000 of the working classes in London were living in buildings put up under the operation of the Act with which his name was associated. Until the report of the Commission which had been sitting was issued, his mouth was closed as to their action; but he felt justified in complaining of the disgraceful neglect of the provisions of his own Act, and would suggest to the working classes that they might do much in their own interest by agitating and seeing that the best men were put on vestries and district boards to obtain for them pure water, light, air, and decent dwellings. A great deal might be done through the agency of the City Livery Companies, and he strongly advised these Corporations to take up the question of housing the working classes, while they had time, as a means of enlisting public sympathy in their favour. He fully endorsed

the dictum of their noble chairman that if we were to win in the race of competition with foreign nations, it could only be by unity of action between employers and employed, and between landlord and tenant. If all these classes remembered that union was strength we should not fail.

The Earl of Aberdeen said he regarded the proceedings of the day with peculiar interest and most hearty sympathy. All had been struck by the appearance of the building, and still more by the motive and object with which it had been erected. He was glad to think that, in spite of the numerous accounts of divergent feeling and disagreement between employers and employed, there was abundant proof that when employers manifested a real, practical, and hearty sympathy in the well-being of those in their employment their efforts were cordially reciprocated. His experience in regard to landlords and tenants had been that where there was a mutual desire to cultivate kindly relations such efforts were not without abundant and fruitful results. The present was a most opportune time for such aids to mental improvement as the building they were in proposed to furnish, for they were on the point of a large extension of the franchise, and every thoughtful working-man who was about to exercise the privilege of the vote would desire to qualify himself to the utmost for taking part in the government of the country. He sincerely hoped the inauguration of this work would set an example destined to be widely followed. He deeply regretted the absence of one distinguished man whose name stood among the list of guests (Earl Cairns), and whose loss they were all lamenting; and also that the statesman and philanthropist who was to have presided was prevented by illness from attending. He said statesman as well as philanthropist, for he knew of at least one Prime Minister who had desired the Earl of Shaftesbury to enter his Cabinet. His name was associated with forty years of persistent effort to improve the dwellings of the poor, and he was sure those who used that hall would feel satisfaction that his honoured name was inscribed on one of the pillars of that handsome hall.

Sir W. M'Arthur, M.P., proposed, and Mr. J. E. Vanner seconded, a vote of thanks to the chairman, who, in response, also referred to the philanthropic labours of the Earl of Shaftesbury as a young man, in exposing the disgraceful condition of the London slums, and to the valuable results that had followed his labours.

After some complimentary votes the company went over the works, where the Earl of Harrowby addressed a few words to the workmen, and then tea and coffee were served in the "Queen's Hall."

The following letter from Sir Dighton Probyn, dated Killarney House, Killarney, April 18, relating to a copy of the illustration in *The Architect*, was received by Mr. G. H. Chubb too late to be read at the ceremony:—"I have shown to the Prince of Wales your letter of the 15th inst., and the drawing of your new buildings which was enclosed in it. The Prince was pleased with the sketch, and expressed a hope that other large firms might be induced to follow your example and provide equally comfortable accommodation for their workmen."

It may be mentioned that Mr. R. L. Lowe, of Farnworth, Bolton, laid the floors with his patent wood-block flooring.

## VALUATION OF BUILDINGS.

THE Assessment Committee of the Nottingham Union having increased the valuation of the banking premises of Messrs. Moore & Robinson (Limited) in Nottingham, an appeal was lodged by the owners. In 1877 the property was valued at 500*l*. The Assessment Committee increased the amount to 750*l*., but, after some correspondence, it was reduced to 625*l*.. The case was brought before a special session of four magistrates, when it was further reduced to 521*l*.. Against that decision the Assessment Committee appealed to the Quarter Sessions, and the case was heard before Mr. Buszard, Q.C., M.P. It was contended by the committee's counsel that the present value of the building was 8,000*l*., which at 4½ per cent. gave 360*l*., the total rental being estimated at 820*l*.. In support of that view witnesses were called. Mr. Fothergill Watson, architect, said that he had made a careful survey of Messrs. Moore & Robinson's bank. The area was 713 square yards, and there was a depth of frontage to the market place of 80 feet. He thought 820*l*.. a fair annual sum for which the land and the buildings ought to be assessed. He reckoned that the value of the land was 13,130*l*., and that of the buildings 8,000*l*.. Mr. W. A. Heazell, architect, said that he had made an estimate of the value of the bank for letting purposes. The price he put on the land was 13,600*l*., which at 3½ per cent. gave 476*l*.. for a ground rent, and the value of the buildings he stated at 7,300*l*., which at 4 per cent. brought up the total to 756*l*.. Mr. R. C. Sutton, architect, put the value of the land at 13,185*l*., and that of the buildings at 6,704*l*., which at 3½ and 4 per cent. respectively produced 729*l*.. as the rental. Mr. Castle said that



he had had experience as a rating valuer all over the country, and he assisted in valuing the town of Nottingham for the Assessment Committee in 1876. He valued the bank buildings at 7,200*l.*, and he put the fee simple of the land at 10,600*l.*, giving a rental of 700*l.*

On behalf of the bankers the following evidence was given. Mr. Robert Evans, J.P., architect, said that his opinion of the letting value of the bank was that it was 500*l.* gross, but he did not think that it would realise that amount by 50*l.* He should think that the building could be erected at 6*d.* a foot. Mr. Henry Hallam, estate agent, valued the property at 470*l.* gross rental, the net being about 400*l.* Mr. G. T. Hines, architect, gave the rental at 490*l.*, and Mr. Huskinson put a similar value on it. The building cost 6,000*l.*

Mr. Buszard, Q.C., in giving judgment, said he could not put his finger upon any portion of the evidence which justified the assessment of 62*½* *l.*, and what struck him the most was that it was a remarkable circumstance that ever since 1877, as admitted by the witnesses for the bank, other property in the neighbourhood had unquestionably increased in value 20 or 30 per cent. Yet it was contended that the property in dispute had stood still, or had only increased, as the judgment of the special session would seem to show, to the extent of 4 per cent. He could hardly accept that proposition. It seemed to him that the property should be valued at what it would cost a hypothetical tenant to provide such a structure in such a locality if one was required. Taking that and all other matters into consideration, it seemed to him a curious speculation how the assessment had been arrived at. Mr. Watson took the value of the land at 13,130*l.*, a figure which was practically not disputed, and it was admitted by Mr. Evans and those who were called for the bank to be a correct figure, yet taking that figure at 3*½* per cent., it only gave the amount of 460*l.* per annum gross. Then there was the estimated cost of putting upon the land a building of such a character as would not be in excess of the requirements of such a tenant as it was supposed would be necessary for similar premises. The witnesses for the Assessment Committee gave various speculations as to the value of the building, but they knew from the evidence of Mr. Huskinson precisely what it did cost, namely, 6,000*l.* That was 15 years ago, and the result of the evidence that was put forward practically showed that that was what it would cost to-day if the hypothetical builder had to erect the bank again. Mr. Watson took the buildings at 4*½* per cent., and the other witnesses called on behalf of the Assessment Committee took them at 4 per cent., which he (the Deputy Recorder) considered a fair thing. The building cost 6,000*l.*, which at 4 per cent. gave a gross annual value of 240*l.* That sum added to 460*l.*, the figure arrived at as the value of the land, produced a gross estimated rental of 700*l.* He very much regretted being left in the dark the day before by both sides as to what was the rating of property in the same locality. However, he had since become more acquainted with the locality, and he must say that he thought some evidence could have been called as to the value of other property in the neighbourhood, which would have been some sort of guide to the value of that property. Notwithstanding that he had arrived at the conclusion that a fair sum at which the gross estimated rental should be taken was 700*l.*, which would give a ratable value of 560*l.*

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### THE BAYEUX TAPESTRY.

THE origin of the long piece of needlework called the Bayeux Tapestry has given rise to controversy. The short essay by Dr. Lingard, which is now published, is rarely referred to, although it is interesting as suggesting the difficulties which arise when the subject is considered by an historian.

This tapestry is a piece of canvas 19 inches broad and about 226 feet long, worked with worsteds of several colours, and divided into seventy-two compartments designed to represent in succession the conquest of England by the Duke of Normandy.

To make it even probable that this tapestry was, as is often affirmed, the work of the Conqueror's queen, Matilda, or a gift from her to the church of Bayeux, it is necessary to show that there exists some historical testimony; or, in the absence of such testimony, some ancient tradition; or, in the absence of both these, something in the character of the tapestry itself which may serve to connect it with the name of that princess:—

1. That there is no historical testimony which bears in any way on this question is admitted on all hands.

2. Neither is there any ancient tradition. It may be at present the popular belief at Bayeux, but it is not an ancient tradition; it cannot be traced further back than the year 1730, when it is first mentioned by Lancelot and Montfaucon. We are acquainted with earlier writers who have described the city of Bayeux, its cathedrals and its curiosities; but not one of them has ever noticed this supposed tradition. It was probably the conjecture of some antiquary, which was at first gratefully accepted, and has since been carefully preserved by the inhabitants.

We have two ancient inventories of the valuable articles formerly belonging to the church of Bayeux, the one made in 1369, the other in 1476. In both the tapestry is noticed; in neither is any mention made of its origin or of its donor. The latest of these inventories was made by two of the canons deputed by the chapter for that purpose, who not only enter every article separately, but notice also its *circumstances*, a word which is made to include the use to which it was applied, the name of the donor, and the tradition of the place with respect to it. Thus they tell us of a chasuble which belonged to Bishop Odo; of a helmet which belonged to Duke William; of two mantles, adorned with jewels, which, according to tradition—*comme on dit*—were worn by William and Matilda at their marriage; of two hangings, the gift of the patriarch of Jerusalem; and of a very long and narrow piece of tapestry, with drawings and writings representing the conquest of England:—"Une tente tres longue et etroite de telle à broderie de ymages et escripteaulx faisans representation du conquest d'Angleterre." This last was undoubtedly the tapestry in question. Now what are the *circumstances*? Do the deputies name the donor? Do they notice any traditions respecting it? No; all that they tell us is that it is yearly hung round the nave of the church on the festival of the relics (July 1), and during the octave. Most assuredly if there had then existed at Bayeux any popular belief respecting the origin of the tapestry, they would have noticed it in the same manner as they noticed the *on dit* respecting the two mantles. Their silence then is a satisfactory proof that the tradition to which appeal is now made had no existence in the middle of the fifteenth century.

3. But is there not something in the tapestry itself to induce a belief that it was the work or the gift of Matilda? No: there is absolutely nothing. She is not named in the supercriptions; she is not represented in the drawings. There are three figures of females, but not one of her. There were many compartments into which she might with propriety have been introduced, but she seems to have been as much forgotten by the artist as if he had never heard of her existence. Nor does the costliness of the work bespeak a royal benefactor. It is of the most homely materials, of ordinary canvas worked with worsteds of different tints, which serve only to depict the forms of the objects and not to imitate their natural colours. There is in it no embroidery of gold, none of silver, none of silk, nothing worthy the rank or the munificence of the supposed donor. Hence, in the absence of all historical evidence, of all ancient tradition, and of any proof to be derived from the tapestry itself, it is difficult to conceive on what ground it is so confidently and pertinaciously attributed to the queen of the Conqueror.

The reader will have noticed the immense disproportion between the breadth of the tapestry (about 19 inches) and its length (226 feet); a disproportion which shows that it was originally intended to decorate some building of considerable extent. What building was that? Plainly the church of Bayeux; for there we find it centuries ago annually decorating on certain festivals the whole circuit of the nave, its measurement being then, as it still is, the same with that circuit. Whether it would have equally suited the nave of the church which existed in the time of Matilda may be doubted, for that church was destroyed with the episcopal buildings in 1106, twenty-three years after her death, and the new one was not built till half a century later. But be that as it may, there cannot be a question that the tapestry was originally meant as a decoration for the church of Bayeux; and in the composition of several of the compartments there is much to show that it was designed also to commemorate the share which the men of Bayeux bore in the conquest of England. Of all the noble and powerful chieftains who accompanied the Conqueror, two only, if so many as two—namely, his brother, Robert of Mortain, and perhaps Eustace of Boulogne—are depicted in it, and pointed out by name, and that only once; but the attention of the spectator is directed in the same manner to Odo, the Bishop of Bayeux, in three separate compartments. Nor is that all. Three other individuals—Turolf, Vital, and Wadard—are equally distinguished in compartments 11, 49, and 62. Their names are given as if they were of higher importance in the estimation of the donor or artist than the most illustrious barons and chieftains in the army. Who then were they? Look into the pages of history and you will not find them. They were unknown to William of Poitou and Orderic and Wace. But open the record of Domesday, and there you meet with them in almost the first page—three men of Bayeux, all



homagers of Bishop Odo, all rewarded by him with lands in England for their services. Ralph, the son of Turolde—the father was probably dead when the survey was made—appears in possession of nine different properties in Kent (Domesday, 1, 7, 8, 9), Vital of three (ibid. 7, 10), and Wadard—the *hic est* Wadard of the tapestry—of more than thirty in the counties of Kent, Surrey, Dorset, Warwick, and Lincoln, besides six burgage messuages in Dover (ibid. 1, 6, 7, 10, 32, 77, 155, 238, 342). What right could these obscure retainers of the Bishop of Bayeux have to be depicted and designated by name in preference to the most noble and celebrated of William's associates? I would rather believe that the tapestry originated in the personal vanity of some of these men, or of their descendants, than that Matilda would so highly distinguish them in a work designed by her to commemorate the conquest of England by the arms of her husband.



### "Pecksniffs."

SIR,—Noticing in your issue of the 11th inst. a lengthy and somewhat over-critical analysis of Charles Dickens's delineation of Pecksniff "By a Correspondent," I cannot resist the temptation to make a few remarks on his indignant refutation of the author's so-called slander on our honourable profession.

The first thing which becomes plainly evident to the mind in perusing the article is the fact that Dickens is by no means among the favourite authors of the writer, who so far fails to appreciate him as to be unable to properly understand and interpret his acceptedly clever caricatures, which are generally, and in this instance unfortunately, far from being incorrect. Though a great deal could be said which might lessen the value of "Correspondent's" opinion of Dickens as an author, and his not over-correct interpretations of various parts of the work in question, to open a discussion on such a subject would be both unnecessary and out of place in a paper of this description. The main object of the article is apparently to prove, or more correctly to assert, that Pecksniff never did nor does now exist, except in imagination—that is, so far as the experience of "Correspondent" can show; for, look where he will, he has failed to discover in the architectural ranks any resemblance to that "mean, dishonest, hypocritical" individual, and is so confident in himself as to defy the production of a second Pecksniff. "Correspondent" either must have kept his eyes shut to the little failings of his professional brethren, or is fortunate enough to move in an exceptionally exalted sphere of professional virtue. Or, may be, he has been searching for the counterpart among the cream of the profession, and, as a matter of course, has failed to discover any such thing. I emphasise "discover" advisedly, for, if the rumours which one hears (not always without foundation) are anything to go by, there is more Pecksniffian element among the "upper ten" than does credit to our honourable fraternity. Unfortunately, my lot has so far had a different aspect to "Correspondent's," for, degrading as the confession may be, there is scarcely one despicable trait in the character of the contemptible Pecksniff of which I have not seen its duplicate in one or another of the black sheep which are to be found in the architectural flock which goes to make up the profession.

No doubt "Correspondent" will be both astounded and indignant at this broad assertion, but it is nevertheless only too true, and there is many a right-meaning, hard-working "youngster," starting with the good and honour of the profession at heart who could add his testimony to this, founded on his own sad and bitter experience, for never was there such a time when the honour of the profession was so degraded and dragged through the mire as now, and by a certain class of individuals calling themselves architects, who if they do not copy every one of the iniquitous practices of Pecksniff, it is not because they are incapable of so doing, but because they have not the opportunity. The will is undoubtedly there, and Dickens's caricature is none the less a reality because circumstances are not sufficiently favourable, and opportunities not forthcoming, by which these modern Pecksniffs could further testify to the truthful portrayal of the original by their injurious and dishonest practices.

In conclusion, while I admire and envy "Correspondent's" exalted and somewhat ethereal view of the profession, I regret that, while I continue to see and hear the almost daily incidents which prove that Pecksniff has only too many faithful followers, I shall be unable to endorse his opinion.

I am, sir, yours faithfully,  
ONE WHO HAS SEEN PECKSNIFF.

A Hospital is to be erected in Holloway Road for which six architects will be invited to compete.

## SCHOOL BUILDINGS.

**Accrington.**—As new Church schools are to be erected in Hargreaves Street, the committee invited Messrs. Maxwell & Tuke, of Manchester, Messrs. Stones & Gradwell, of Blackburn and Accrington, and Mr. George Baines, of London, to prepare designs. The design submitted by Messrs. Stones & Gradwell has been selected. Accommodation is provided on the ground floor for 304 girls, 176 infants, and 72 babies. A tea-making room is also provided, having a lift for communication with the upper floor. By raising a revolving shutter between this room and the adjoining class-room, a large room is obtained for cookery classes. There is ample playground accommodation, part of which is under cover. On the first floor there is a large assembly room, containing 337 square yards. There is also a lecture hall containing 151 square yards, a large committee-room, and ante-room. For Sunday school purposes the assembly-room can be divided into a number of class-rooms.

**Sharples.**—The Belmont day schools have just undergone reconstruction and enlargement. The works of extension and improvement have been carried out from plans prepared by Mr. Grundy, architect, of Manchester.

**Upton.**—New National Schools and schoolmaster's house, erected at the cost of the Humberstone family, have been opened. The work was begun about nine months ago, and has been carried out by Mr. Beckett, contractor, of Hartford, from the designs of Mr. E. A. Ould, architect, of Chester.

## GENERAL.

**Mr. Ruskin** has, it is said, resigned the Slade Professorship of Art at Oxford, and will not deliver the remaining lectures of this year's course.

**The Annual Costume Ball** in aid of the Prize Fund of the Chiswick School of Art will be held on May 6.

**Mr. T. Chatfield Clarke** has been nominated as one of the surveyors and umpires of the Board of Trade.

**Works of Art** intended for the Summer Exhibition of the 19th Century Art Society are to be sent to the Conduit Street Galleries on the 30th inst.

**The Committee** on the West Front of Westminster Hall have decided to take the draft report which recommends the adoption of Mr. Pearson's plan as the basis of their final decision in the matter.

**Mr. G. D. Oliver**, of Carlisle, has been appointed architect for the new infirmary which is to be erected at Workington. The works are to be commenced as soon as working drawings are prepared.

**The German Reichstag** have rejected the proposal to increase the duty on imported slates, which would have seriously affected the English trade. The duty on slates imported by sea continues at 6*d.* per cwt., as heretofore.

**The Artisans' Exhibition** in Dublin will be opened on June 24.

**A Reconstruction** of Holy Trinity, South Shore, Blackpool, is contemplated. It is intended to provide in the new church about 1,000 sittings, the estimated cost for completion being between 7,000*l.* and 9,500*l.*

**The Metropolitan Board of Works** have agreed to lend 30,000*l.* to the St. Saviour's Union towards the cost of erecting a new infirmary at East Dulwich Grove.

**Professor Rudolf von Eitelberger**, the art historian, Professor of Art History at the Vienna University, and founder of the Austrian Museum for Art and Industry, died on Saturday last at Vienna.

**The Foundation-stone** of the new building of Sion College, on the Victoria Embankment, was laid on Tuesday. The new building will be Tudor in style. The material will be of red brick with facings of Doulton stone. Mr. A. W. Blomfield is the architect, Mr. J. T. Chappell the builder, and Mr. T. Simpson clerk of the works.

**Madame N. Rothschild** has subscribed 5,000 frs. towards the erection of the memorial of Eugène Delacroix, and Baron Arthur Rothschild 1,000 frs.

**The Electric Lighting** of the Leeds Municipal Buildings has been dispensed with for the present, in consequence of the litigation pending between the Corporation and the contractors for the light.

**The Edinburgh Town Council** have agreed to subscribe a sum of 2,500*l.* to the guarantee fund of the proposed international exhibition in that city.

**A Sanitary Hospital** is proposed to be erected for Warwick, to provide thirty beds at an average cost of 150*l.* each.



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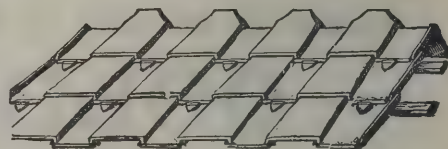
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A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, APRIL 25, 1885.

## JUDICIAL FORM AND SUBSTANCE.

A CASE which was heard a few days ago in London is another instance of the difficulties of the Courts when dealing with building accounts. The action was taken by Mr. Jowett, who is a paviour and contractor against the owner of some houses at Goole for the expense of paving opposite to the houses. There was a contract to do it at 1s. 9d. per square yard, but there was a conflict of evidence as to whether this was to be for the mere paving, or whether it was also to include the cost of "sewering and levelling." The case for the plaintiff was that it was to be only for the paving, and he called the surveyor of the local board to prove that 1s. 9d. a yard was a fair price for that, and that 2s. 6d. a yard would be a fair price if it was to include the sewerage. At the rate of 1s. 9d. a yard the amount would be 47l., for which accordingly the plaintiff claimed. The defendant paid into Court 26l., deducting 21l. which he had to pay to the local board for "sewering and levelling." The case was remitted to the County Court at Bradford for trial, and the Judge, upon the evidence, thought that the parties were never *ad idem*, so that the contract at 1s. 9d. a yard was not made out, and he nonsuited the plaintiff.

On behalf of the plaintiff Mr. Frank Mellor now moved for a new trial, on the ground that the judge was wrong, as the plaintiff would be entitled to recover the whole sum on a *quantum meruit*, or, at all events, to recover the real value of the work, whatever it was, and he ought not to have nonsuited the plaintiff. [Mr. Justice Lopes: I do not see how he could nonsuit; but ought he not to have given judgment for the defendant?] No, because there was evidence that the work done was well worth 47l., apart from the contract. [Mr. Justice Manisty: But there was evidence, on the other hand, that the plaintiff contracted to do the whole work, including the sewerage, for the 1s. 9d. a yard.] That was not so in fact, and the judge did not enter into the question of true value. [Mr. Justice Lopes: The judge may have been wrong in point of form, but I am inclined to think he was right in substance. Mr. Justice Manisty thought so too, and said the judge seemed to have adopted the view that the 1s. 9d. a yard was to cover the sewerage, or that, at all events, it was not made out that it did not.] But he ought to have found that it did in order to nonsuit the plaintiff. [Mr. Justice Lopes: That, no doubt, is the flaw in his judgment, but it is a mere point of form.] The plaintiff is entitled to judgment.

The Court came to the conclusion that they could not, as the case stood, direct a judgment for the plaintiff. Neither could they grant a new trial, as it did not appear that there had been any substantial miscarriage, though there may have been an error in mere form. There was a conflict of evidence as to whether the 1s. 9d. a yard was to include everything, and they rather thought that it was, and the judge, thinking that it was so, found that it was not proved that anything more than the sum paid into court was due, and so in form he ought to

have given judgment for the defendant, and not a nonsuit; but that was not material, and, as substantial justice had been done, the application would be refused, and judgment given for the defendant.

## OVERHEAD WIRES IN LONDON.

A COMMITTEE of the House of Commons has been appointed to inquire into the subject of telegraph and telephone wires. At the first meeting, Mr. G. Noah Johnson, Chairman of the Commission of Sewers of the City of London, stated that he was of opinion that legislation for the control of the wires had become necessary. With regard to the mode in which the wires should be fixed, he believed that it would be well to put them all underground, if it were within the bounds of possibility, consistently with the practical working of the wires. But the difficulties in the way of putting them underground were insurmountable, chiefly on account of the enormous cost. It was also, he believed, the fact that the difference between the conditions of telephone and telegraph wires was such as to necessitate the separation of the one class from the other. For scientific reasons it was held desirable that telephone wires should be carried overhead and telegraph wires underground. If the whole expense of putting telephone and telegraph wires underground were to be put upon the companies it would be too great for them to bear. With regard to the administration of the law in this matter, he would entrust it to the local authorities who had control over the streets, but he had no doubt that the governing body of the City of London would be able to efficiently exercise any jurisdiction given to them. There were ten times more wires overhead in the City now than there were a few years ago, and so close together were they that in the event of a heavy gale of wind or a very severe snowstorm there would be serious danger of their coming down and doing serious damage. Colonel Heywood, Engineer to the Commission of Sewers, having charge of the roads and pavements in the City, also spoke of the rapid increase in the number of overhead wires in the metropolis. The increase, he said, had already become so great in the City that the wires now constituted a grave public nuisance. To show the number of wires stretched across the streets he declared that there were 320 over Moorgate Street; over Coleman Street, 312; Leadenhall Street, 240; Fenchurch Street, 160; and Queen Victoria Street eight cables and 408 wires. At one spot in Fleet Street—viz., at Ludgate Circus—there were to be counted two cables and 142 wires; across King Street there were six cables and seventy-four wires, and over Cannon Street seven cables and 360 wires. Over some of the streets of the City there were something like from 1,200 to 1,500 lines a mile. He was of opinion that in the future the telegraph and telephone wires would become so numerous that it would be absolutely necessary to put them underground, and to the expense of carrying out this work the local authorities and the public bodies and private companies should contribute.

## COMPETITIONS OPEN.

BOOTLE.—May 1.—Plans and Specifications are invited for the proposed Erection of Public Baths. Mr. J. Alexander, Borough Surveyor Bootle.

WHITCHURCH.—May 9.—Designs are requested for a Small Cottage Hospital. Major Lee, Whitchurch.

## CONTRACTS OPEN.

ABERDARE.—May 6.—For Building Board School for 227 Boys, in Extension of Cwmaman Schools. Mr. R. Orton Gery, Town Hall, Aberdare.

ABERDEEN.—April 28.—For Erecting Agricultural Show Yard. Mr. F. N. Menzies, 3 George Fourth Bridge, Edinburgh.

ACKWORTH.—April 25.—For Class-rooms to Friends' School. Messrs. Clark & Moscrop, Architects, Darlington.

ALVES.—May 12.—For Additions and Repairs to Farm Steading, Earnside. Messrs. A. & W. Reid, Architects, Elgin.

ASHTON-IN-MAKERFIELD.—April 28.—For Building Hospital for Infectious Diseases. Mr. James Hill, Local Board Offices, Ashton-in-Makerfield.

BALTINGLASS.—April 28.—For Building Dispensary, Residence, &c., at Rathvilly. Mr. H. R. Newton, C.E., 202 Great Brunswick Street, Dublin.

BARROW-IN-FURNESS.—April 29.—For Erection of Boiler, Rearranging Cooking Apparatus, Altering House, and Building Fence Wall. Mr. Frank Taylor, Clerk to the Guardians, Barrow-in-Furness.

BELFAST.—For Building Two Semi-detached Houses, Oldpark. Mr. Joseph Bell, Central Buildings, Royal Avenue, Belfast.

BELFAST.—April 25.—For Building Shops and Dwelling-houses. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

BEVERLEY.—April 29.—For Building Cottage Hospital and Dispensary. Messrs. Smith & Brodrick, Architects, Cogan Chambers, Hull.

BIRSTALL.—April 28.—For Building Two Dwelling-houses and Shops, Market Place. Mr. W. Ellis, Architect, Market Chambers, Heckmondwike.

BLAINA.—April 27.—For Building English Congregational Chapel and Schoolroom attached. Mr. J. Thomas, Architect, Glannant, West Cross, Swansea.

BOLTON.—April 27.—For Alterations and Repairs, Sunray Hotel, Mill Street. The Crown Brewing Company, Rochdale Road, Bury.

BOSTON.—May 9.—For Building Farmhouses, Navenby and Fishtoft. Messrs. C. Kirk & Sons, Architects, Sleaford.

BOURNEMOUTH.—For Building Wesleyan Chapel, School, &c. Mr. Robert Curwen, Architect, 168 Palmerston Buildings, Old Broad Street, E.C.



**BURNLEY.**—May 13.—For Erection of Municipal Buildings, Police Courts, and Public Baths. Mr. H. Holtam, Architect, Bond Street, Dewsbury.

**BURNOPFIELD.**—May 2.—For Building Six Houses. The Co-operative Society, Blaydon.

**CANNOCK.**—May 5.—For Building Board School for 300 Infants at Chadmoor. Mr. Benjamin Baker, Architect, Free Library Buildings, Lichfield Street, Willenhall.

**CARLISLE.**—For Building Mission Hall. Mr. T. Taylor Scott, Architect, 14 Bank Street, Carlisle.

**CHELSEA.**—May 6.—For Sanitary Turret and Alterations at Old Offices, Arthur Street. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**CLAYTON HEIGHTS.**—April 25.—For Building Villa Residence, Stabling, and Out-offices. Mr. John Drake, Architect, Winterbank, Queensbury.

**COLCHESTER.**—For Works at Old Corn Exchange. Mr. E. J. Dampier, Diocesan Surveyor, 40 Head Street, Colchester.

**CORNWALL.**—May 9.—For Erection of Club-house and Buildings, Cornwood, and Schoolmistress's Cottage, Lutton. Messrs. Oldreive & Hingston, Land Agents, Totnes.

**COVENTRY.**—April 27.—For Laying Sewer, Leicester Road. Mr. E. J. Purnell, C.E., City Surveyor, St. Mary's Hall, Coventry.

**DEVIZES.**—April 30.—For Erection of Brewery and other Buildings. Mr. John A. Randell, Architect, Exchange Place, Devizes.

**DEVONPORT.**—April 25.—For Building Offices at rear of 88 Fore Street. Mr. M. Underwood, Architect, 16 St. Aubyn Street, Devonport.

**DEWSBURY MOOR.**—April 30.—For Building Shop and Four Houses. Mr. F. W. Ridgway, Architect, Church Street, Dewsbury.

**DOVER.**—April 28.—For Alteration and Extension of Outfall Sewer. Mr. E. Wollaston Knockor, Town Clerk, Castle Hill House, Dover.

**DUDLEY.**—May 2.—For Building Chapel, Old Hill. Mr. J. Meachem, Cradley.

**DUBLIN.**—May 5.—For Construction of Public Swimming Baths, Tara Street. Mr. D. J. Freeman, City Architect, Municipal Buildings, Cork Hill, Dublin.

**ELGIN.**—April 25.—For Building Dwelling-house. Messrs. Macbey & Gordon, Surveyors, Elgin.

**ELGIN.**—April 28.—For Building Dwelling-house and Shops, High Street. Messrs. A. & W. Reid, Architects, Elgin.

**ELGIN.**—May 2.—For Additions to Farm Steading and Dwelling-house. Messrs. Macbey & Gordon, Surveyors, Elgin.

**ELTHAM.**—April 29.—For Construction of Sewers. Plans at the Surveyor's Office, Eltham, Kent.

**FENTON.**—April 28.—For Supply of 36-inch Station Governor, with Inlet, Outlet, Valves, and Connections. Mr. James Stelfox, Engineer, Gasworks, Manager, Belfast.

**FULFORD.**—May 7.—For Building Two Semi-detached Villas, Heslington Lane. Messrs. Fisher & Hepper, Architects, 16 Castlegate, York.

**GILSLAND.**—April 29.—For Building Three Cottages. Mr. Wm. Bell, Architect, Central Station, Newcastle-on-Tyne.

**GLASGOW.**—May 4.—For Verandah Roofing for Shields and Paisley Canal Stations and Ayr Passenger Station. Drawings, &c., at the Engineer's Office, St. Enoch Station, Glasgow.

**GREENOCK.**—April 27.—For Supply of Two Sample Hydraulic Travelling Cranes (3 tons and 1½ ton), &c. Mr. W. R. Kinipple, C.E., 17 West Blackhall Street, Greenock.

**GUILDFORD.**—April 25.—For Building Parish Hall. Mr. W. G. Lower, Architect, 12A High Street, Guildford.

**HALIFAX.**—May 1.—For Building Eight Dwelling-houses. Messrs. Geo. Buckley & Son, Architects, Waterhouse Street, Halifax.

**HASTINGS.**—April 25.—For Building Row of Shops, with Mansions above. Drawings, &c., at Lonsdale Chambers, 27 Chancery Lane, London. Mr. Arthur Wells, Architect, 25 Havelock Road, Hastings.

**HALIFAX.**—May 8.—For Building School Chapel. Mr. James Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

**HEREFORD.**—April 27.—For Alterations and Additions to Freeman's Cottages. Mr. S. Harrison, Architect, St. Martin's East, Hereford.

**HEXHAM.**—April 25.—For Building Wesleyan Chapel and Schools. Mr. F. W. Brooks, Architect, 40 High Row, Darlington.

**HUDDERSFIELD.**—April 30.—For Building Boiler-house for Five Boilers, Long Chimney, Pulling-down Two Old Chimnies, and other Works, Nortonthorpe Mills. Messrs. J. Kirk & Sons, Architects, Huddersfield.

**HYDE.**—May 5.—For Alterations to Station. Plans at the Engineer's Office, 28 London Road, Manchester.

**JARROW.**—April 25.—For Building Board School. Mr. J. H. Morton, Architect, South Shields.

**KEITH HALL.**—May 2.—For Building Farm Offices. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

**KEYHAM.**—May 1.—For Building Board School. Messrs. Macaulay & Draper, Friar Lane, Leicester.

**LANDPORT.**—May 5.—For Enlarging Post Office. The Postmaster, Landport.

**LEEDS.**—May 4.—For Enlarging Board School, Burley Road. Mr. R. L. Adams, Architect, Imperial Buildings, Bond Street, Leeds.

**LIMERICK.**—May 4.—For Works for Cashen River Drainage District. Mr. W. Barrington, jun., C.E., Clare Chambers, 10 George Street, Limerick.

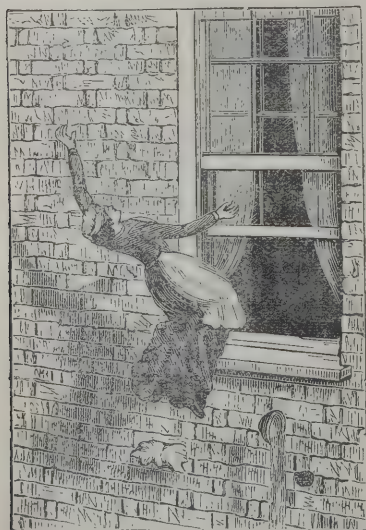
**LONG EATON.**—April 27.—For Building Pavilion at Recreation Ground. Mr. J. Sheldon, Architect, Market Place, Long Eaton.

**LUGWARDINE.**—April 25.—For Building Vicarage. Mr. T. Nicholson, Architect, Hereford.

**MARKET WEIGHTON.**—April 29.—For Constructing Covered Reservoir, Buildings, and other Works at the Waterworks. Mr. J. F. Fairbank, C.E., 14 Parliament Street, Westminster.

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MARYBOROUGH.—May 4.—For Additions and Alterations to Town Hall. Mr. H. Shaw, Architect, 5 Westmoreland Street, Dublin.

MARYHILL.—For Fitting Up Agricultural Show Yard. Mr. J. Macaulay, Royal Bank, Maryhill.

MARYPORT.—April 25.—For Building Primitive Methodist Chapel at Crosby Villa. Mr. H. Thompson, Dearham Row, Dearham, Carlisle.

METHLEY.—May 4.—For Construction of Sewerage Works. Mr. T. Fenwick, C.E., 1 Park Place, Leeds.

MIDLAND RAILWAY.—May 1.—For Foundations for Station and Hotel Buildings, Bradford. Mr. A. A. Langley, Engineer, Midland Railway, Derby.

NEWCASTLE-UNDER-LYME.—May 11.—For Building Infirmary, Remodelling Portions of Existing Buildings and other Works. Mr. J. Blood, Architect, Guardian Chambers, Newcastle-under-Lyme.

NELSON.—May 2.—For Building Eight Houses, with Garden and Retaining Wall. Messrs. T. Fryer & Co., Nelson.

NEWMARKET.—April 25.—For Additions and Alterations to Palace House. Mr. W. C. Manning, Newmarket.

NEWPORT.—April 29.—For Construction and Erection of Six Purifiers (20 feet square), with Centre and other Valves, and Travelling Lifts, for Gasworks, Crindau. The Engineer, Gas Offices, Mill Street, Newport, Mon.

NORTH SHIELDS.—April 25.—For Alterations and Additions to the Albion Hotel. Mr. F. R. N. Haswell, Architect, 77 Tyne Street, North Shields.

PATRICROFT.—May 4.—For Draining, Laying Mains, &c., on Sewage Farm. Mr. C. C. Hooley, C.E., Green Lane, Patricroft.

RATHOE.—April 25.—For Building Church. Mr. W. Hague, Architect, 62 Dawson Street, Dublin.

REDCAR.—April 25.—For Alterations and Additions to Vicarage. Messrs. Clark & Moscrop, Architects, Feethams, Darlington.

RESOLVEN.—April 27.—For Construction of Reservoir and Laying Water Mains. Mr. W. E. Thomas, Surveyor, 58 Water Street, Neath.

RIPPONDEN.—May 1.—For Building Middle Class House. Mr. S. Wilkinson, Architect, Sowerby Bridge.

SHEFFIELD.—May 4.—For Building House, Dore Road. Mr. J. B. M. Withers, Architect, 5 Surrey Street, Sheffield.

ST. MARY CRAY.—April 28.—For Construction of Retort House, Coal Store, Engine and Boiler Houses, Brick Tank, Sulphate Shed, and Chimney Stack. Mr. F. Morris, C.E., Brentford.

SYDNEY.—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

TERRINGTON.—April 27.—For Building Wesleyan School. Mr. John A. Hillam, South Everard, St. Lynn.

TRANMERE.—April 25.—For Building Pair of Semi-detached Villas. Mr. W. Hesketh, 4 Cable Street, Liverpool.

UDNY.—May 2.—For Building Farm Offices, Bogfehle. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

ULVERSTON.—April 27.—For Repairs to Cemetery Chapels. Mr. J. W. Grundy, Architect, Brogden Street, Ulverston.

WALKDEN.—April 30.—For Building Office. The Co-operative Society, Walkden.

WANDSWORTH.—April 27.—For Building Police Station. The Receiver for the Metropolitan Police District, 4 Whitehall Place.

WARDLE.—April 25.—For Building Shop, Premises, &c. The Industrial Co-operative Society, Wardle.

WATERHOUSES.—April 25.—For Building Store. The Co-operative Society, Crook.

WHICKHAM.—May 5.—For Billiard-room, Conservatory, &c, Dunston Hall. Mr. F. R. Wilson, Architect, Alnwick.

WORKINGTON.—April 25.—For Building Three Houses. Messrs. Scott & Murray, Architects, Victoria Buildings, Workington.

WORTH.—April 28.—For Building Two Houses and Shop. Mr. S. Hird, Thwaites Lane, Worth, Keighley.

WROUGHTON.—April 30.—For Enlargement of Infant School and other Work. Mr. H. Copleston, Clerk to the School Board, Wroughton.

YORK.—April 25.—For Rebuilding Property. Mr. Wm. Brown, Architect, City Chambers, Clifford Street, York.

## TENDERS.

## ALCESTER.

For Extension of Tramp Wards, Alcester.

POLLARD, Astwood Bank (accepted) . . . . . £48 10 0

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For Laying 760 yards of 9-inch Sewer in the Parish of Baddesley Ensor, with Lampholes, Manholes, Flushing Stations, and Ventilators, Atherstone.

Beadman, Witherley . . . . . £162 10 0

Innes & Wood, Birmingham . . . . . 160 0 0

Wood, Baddesley Ensor . . . . . 160 0 0

MORETON, Nuneaton (accepted) . . . . . 135 0 0

Lawrence, Polesworth . . . . . 53 0 0

## ASTON.

For Building Boundary Wall and Piers at the Infectious Diseases Hospital, at Upper Witton, for the Aston Manor Local Board. Mr. W. DAVIES, Surveyor.

Smith, Aston . . . . . £274 0 0

Longton, Birmingham . . . . . 270 0 0

Innes & Wood, Birmingham . . . . . 254 0 0

Whittall, Birmingham . . . . . 254 0 0

Whitehouse & Jones, Birmingham . . . . . 246 0 0

Jevon & Son, Dudley . . . . . 243 0 0

Barker & Son, Handsworth . . . . . 215 0 0

Swift, Birmingham . . . . . 192 0 0

GOWING & INGRAM, Birmingham

(accepted) . . . . . 189 0 0

Surveyor's estimate . . . . . 200 0 0

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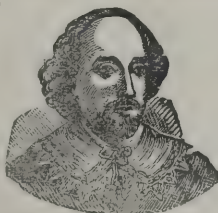
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**BINGLEY.**

|   |            |
|---|------------|
| For Construction of Cast-iron Tank for Three-Lift Gasholder, Bingley. |            |
| Horseley Co., Tipton  | £1,885 0 0 |
| Silvester & Co., Newcastle  | 1,540 0 0  |
| E. & H. W. Haley, Bradford  | 1,862 0 0  |
| Pearson & Knowles, Warrington   | 1,850 0 0  |
| Clapham Bros., Keighley   | 1,804 0 0  |
| Newton, Chambers & Co., Sheffield                                     | 1,500 0 0  |
| CLAYTON, SON & CO., Hunslet (accepted)                                | 1,464 0 0  |

**BISHOPSTOKE.**

For Building Dwelling-house, near Bishopstoke Station, for Mr. Henry Wheeler. Mr. A. W. GALBRAITH, Architect, Winchester. Quantities by Mr. R. S. Wardle, 4 Middle Temple Lane, London.

|                                    |            |
|------------------------------------|------------|
| Franklin, Southampton              | £1,825 0 0 |
| Bull, Son & Co., Southampton       | 1,684 0 0  |
| Sanders, Southampton               | 1,678 0 0  |
| Sealey Bros. & Bascomb, Winchester | 1,560 0 0  |
| White, Bishop's Waltham            | 1,390 0 0  |

The building owner to deliver the whole of the bricks for the job into the site free of cost.

**BLACKBURN.**

For Extension and New Class-rooms, All Saints School, Blackburn. Mr. JAMES BERTWISTLE, F.S.I., Architect. Quantities by the Architect.

*Accepted Tenders.*

|                                |          |
|--------------------------------|----------|
| Marshall & Dent, joiner        | £298 0 0 |
| Duerden, mason                 | 293 0 0  |
| Eastwood, flagging and slating | 75 0 0   |
| Law, plumbing and glazing      | 34 9 0   |
| Airey, plastering              | 26 0 0   |
| Pickup, painting               | 19 0 0   |

All of Blackburn.

**BRISTOL.**

For Supplying and Erecting Hand-power Warehouse Lift at Messrs. Edwards, Ringer & Co.'s Premises, Bristol. Mr. H. CRISP, Architect.

WAYGOOD & CO. (accepted).

**BISHOP AUCKLAND.**

|   |         |
|---|---------|
| For Fencing Labour Yard for the Guardians, Bishop Auckland. |         |
| Bowton  | £98 0 0 |
| Rawes & Thompson  | 95 0 0  |
| Hudson  | 84 0 0  |
| Robson  | 70 0 0  |
| Manners   | 63 0 0  |
| Blacket   | 62 0 0  |
| TINKLER (accepted)  | 57 0 0  |

**BROMLEY.**

For Completion of Two Houses, South Hill, Park Estate, Bromley, Kent. Messrs. BAXTER, PAYNE & LEPPER, Surveyors. Mr. ST. PIERRE HARRIS, Architect.

*House No. 1.*

|                  |          |
|------------------|----------|
| Cooper           | £790 0 0 |
| Crossley         | 776 0 0  |
| CLARK (accepted) | 575 0 0  |

*House No. 2.*

|                  |            |
|------------------|------------|
| Crossley         | £1,060 0 0 |
| Cooper           | 950 0 0    |
| CLARK (accepted) | 796 0 0    |

**CARMARTHEN.**

For Alterations and Additions to Bryncaeran, in the County of Carmarthen. Mr. JAMES BUCKLEY WILSON, A.R.I.B.A., Architect, Swansea.

|                                      |            |
|--------------------------------------|------------|
| Thomas, Watkins & Jenkins            | £6,000 0 0 |
| Thomas, Watkins & Jenkins, alternate | 3,940 0 0  |
| Mercer                               | 5,500 0 0  |
| Mercer, alternate                    | 3,817 0 0  |
| Jones & Co.                          | 4,181 0 0  |
| Brown, Thomas & Johns                | 3,874 0 0  |
| THOMAS (accepted conditionally)      | 3,600 0 0  |

The dressings to be of Box Ground stone from the quarries of Messrs. Giles & Co., Box.

**CHATHAM.**

For Building Fire-engine House, Chatham.

|                   |          |
|-------------------|----------|
| Allaway           | £110 0 0 |
| Sampson           | 95 0 0   |
| Field             | 85 5 0   |
| SEAGER (accepted) | 65 0 0   |

**CARDIFF.**

For High Street Arcade, Cardiff. Messrs. T. WARING & SONS, St. John's Square, Cardiff, and Mr. J. P. JONES, 27 Park Street, Cardiff, Joint Architects.

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|                                    |             |
|------------------------------------|-------------|
| Forse, Bristol                     | £12,490 0 0 |
| Price, Cardiff                     | 11,300 0 0  |
| Lewis, Cardiff                     | 10,800 0 0  |
| Jones Bros., Cardiff               | 10,800 0 0  |
| Howell & Sons, Bristol             | 10,580 0 0  |
| D. Davies, Cardiff                 | 10,350 0 0  |
| D. J. Davies, Cardiff              | 10,350 0 0  |
| Lock, Cardiff                      | 10,188 0 0  |
| Shepton & Son, Cardiff             | 10,175 0 0  |
| SHEPHERD & SON, Cardiff (accepted) | 9,994 0 0   |

*Extra for Spire.*

|                           |          |
|---------------------------|----------|
| Forse                     | £260 0 0 |
| Jones Bros.               | 230 0 0  |
| D. Davies                 | 220 0 0  |
| Price                     | 200 0 0  |
| Lewis                     | 200 0 0  |
| SHEPHERD & SON (accepted) | 200 0 0  |
| Howell & Sons             | 199 0 0  |
| Shepton & Son             | 192 0 0  |
| Lock                      | 191 0 0  |
| D. J. Davies              | 190 0 0  |

For Erecting a Semi-detached Villa in Marine Parade, Penarth. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

Purnell, Penarth.

For Alterations and Additions to Hatherleigh House, Newport, Mon., for Mr. W. S. Ogden. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

PARFITT, Newport (accepted) £1,800 0 0

For the Erection of Two Villas in Plymouth Road, Penarth. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

Speed, Bristol £1,400 0 0

For Additions to Old Hong Kong, Arcot Street, Penarth, for Mr. D. Davies. Davis, Penarth.

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The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

**TESTIMONIALS.**

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

Yours, &c.

"To Mr. Grundy.

JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

"Mr. John Grundy."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City Road, London.

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**CARDIFF**—*continued.*  
For Additions to Bakehouse in Cecil Street, for Mr. Stepenon. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.  
Smallbridge & Son.  
For Building Four Houses in Redpath, Penarth. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.  
Hancock.

**CHATHAM.**  
For Construction of Wharves on the St. Bartholomew's Hospital Estate, Chatham Intra, Kent. Messrs. RUCK, SON & SMITH, Architects, Maidstone. Quantities supplied.  
*Contract 1.*  
Calland & Son, Rochester . . . £490 0 0  
Ball & Gammon, Strood . . . 425 0 0  
Hocking & Co., Strood . . . 395 0 0  
Thompson, Chatham . . . 387 0 0  
FARROW, Maidstone (accepted) . . . 377 12 0  
*Contract 2.*  
Calland & Son . . . 340 0 0  
Ball & Gammon . . . 282 0 0  
Hocking & Co. . . 276 13 0  
Thompson . . . 270 15 0  
FARROW (accepted) . . . 266 9 0  
*Contract 3.*  
Calland & Son . . . 198 0 0  
Ball & Gammon . . . 180 0 0  
Hocking & Co. . . 166 9 0  
Thompson . . . 156 8 0  
FARROW (accepted) . . . 151 10 0

**CLAYTON.**  
For Building Four Houses, Clayton, for Mr. George Stead. Mr. JOHN DRAKE, Architect, Queensbury. Quantities by the Architect.  
*Accepted Tenders.*  
Booth & Ward, Clayton, mason . £350 0 0  
Robinson, Clayton, joiner . . . 120 0 0  
Sunderland, Great Horton, plasterer . . . 29 0 0  
Smithies, Great Horton, slater . . 24 10 0  
Ingham, Clayton, plumber . . . 23 18 0  
Whittaker, Queensbury, painter . . 13 18 6

**CHELSEFIELD.**  
For Building Board Schools and Master's House, at Chelsfield, Kent, for the Chelsfield School Board. Mr. ST. PIERRE HARRIS, A.R.I.B.A., Architect. Quantities by Mr. C. Stanger, of No. 21 Finsbury Pavement.  
Taylor & Son, Bromley . . . £2,607 0 0  
Wood, Chislehurst . . . 2,573 0 0  
Sykes, Catford . . . 2,460 0 0  
Grubb, Bromley . . . 2,417 0 0  
Neeve & Neeve, London . . . 2,412 0 0  
Wright, Chelsfield . . . 2,396 15 0  
Arnaud & Son, Bromley . . . 2,396 0 0  
Clark, Bromley . . . 2,379 15 3  
Denne & Son, Dover . . . 2,350 0 0  
Bingham, Headcorn . . . 2,347 0 0  
W. & F. Croaker, London . . . 2,335 0 0  
Lay, Bromley . . . 2,335 0 0  
Diss . . . 2,330 0 0  
Leeks & Hooker, London . . . 2,298 0 0  
Staines & Son, London . . . 2,288 0 0  
Hunter & Bryant, Warlingham . . 2,281 0 0  
Crossley, Bromley . . . 2,273 0 0  
Parker, Peckham . . . 2,180 0 0  
Brand, Eltham . . . 2,143 0 0  
Adcock, Dover . . . 2,128 0 0  
Warr, Croydon . . . 2,122 0 0  
BALDING,\* Bromley . . . 2,044 0 0  
\* Accepted subject to the approval of Education Department.

**COCKERMOUTH.**  
For Building Printing and Publishing Offices for the *West Cumberland Times*, Cockermouth. Mr. R. S. Marsh, Surveyor, Cockermouth.  
*Masons and Wallers.*  
Lister, McCartney & Lister, Cockermouth . . . £389 4 0  
Borrowseale, Cockermouth . . . 360 0 0  
Gray, Mason & Co., Workington . . 338 14 0  
DUNN, Cockermouth (accepted) . . 320 10 0  
*Joiners.*  
Gray, Mason & Co., Workington . . 346 4 0  
Armstrong, Cockermouth . . . 303 0 0  
Robinson, Cockermouth . . . 297 9 0  
CRONE & Co., Cockermouth (accepted) . . . 295 9 0

**COCKERMOUTH**—*continued.*  
*Plasterers.*  
Burgess & Son, Cockermouth . . . 55 0 0  
Altringham, Cockermouth . . . 49 19 0  
WALLER, Cockermouth (accepted) . . 43 0 0  
*Plumbers.*  
Banks, Cockermouth . . . 70 0 0  
FISHER, Cockermouth (accepted) . . 59 12 0  
*Slaters.*  
Mandle, Maryport . . . 76 0 0  
Walker, Cockermouth . . . 73 0 0  
ARMSTRONG, Cockermouth (accepted) . . 66 16 8  
*Painters and Glaziers.*  
Boyd, Cockermouth . . . 45 12 0  
Ritson, Cockermouth . . . 45 7 6  
PEARSON, Cockermouth (accepted) . . 33 0 0

**CROYDON.**  
For Erecting a Congregational Church in London Road, West Croydon. Mr. W. D. CHURCH, Architect, 12 South Place, Finsbury. Quantities by Mr. C. Stanger, Surveyor, 21 Finsbury Pavement, E.C.  
Colls & Son . . . £12,700 0 0  
Glasscock . . . 12,700 0 0  
Higgs & Hill . . . 12,140 0 0  
Dove Bros. . . . 11,875 0 0  
Jerrard . . . 11,093 0 0  
Hobbs . . . 11,090 0 0  
Woodward . . . 10,937 0 0  
Bowyer . . . 10,879 0 0  
Staines & Son . . . 10,666 0 0  
Shurmur . . . 10,584 0 0  
Goddard & Son . . . 10,480 0 0  
Smith & Son . . . 10,445 0 0  
Perry & Co. . . . 10,430 0 0  
Belham . . . 10,293 0 0  
Kilby & Gayford . . . 10,234 0 0  
Holloway . . . 9,973 0 0

**FOWEY.**  
For Building Hotel and Stables, Fowey. Mr. A. S. CLUNES, Architect.  
WELLINGTON, Lostwithiel (accepted) . . . £886 0 0

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*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*  
We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*  
F. H. SMITH, Esq., 52 QUEEN VICTORIA STREET, E.C. 4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.  
In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,  
DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*  
"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



## COMPTON GIFFORD.

|   |        |     |
|---|--------|-----|
| For Drainage Works (Contract No. 1), Compton Gifford. Mr. EDWARD APPLETON, C.E. |        |     |
| Thomas & Sons, Dartmouth  | £9,500 | 0 0 |
| Hawkins, Dawlish  | 9,450  | 0 0 |
| Goad, Plymouth  | 8,580  | 0 0 |
| Norris, Bolton  | 8,560  | 0 0 |
| Shaddock, Plymouth  | 7,736  | 0 0 |
| Finch & Son, Plymouth   | 7,194  | 0 0 |
| Mackay, Hereford  | 7,180  | 0 0 |
| Harley, Plymouth  | 7,133  | 0 0 |
| Pethick, Plymouth   | 5,994  | 0 0 |
| Shulabear, Plymouth   | 5,889  | 0 0 |
| Hill, Beckenham   | 5,694  | 0 0 |
| Engineer's estimate   | 6,286  | 0 0 |

## DARTFORD.

|  |      |     |
|--|------|-----|
| For Reconstruction of Farningham Lees Footbridge, Dartford. Mr. FREDK. W. RUCK, County Surveyor, Maidstone. Quantities by Messrs. Ruck, Son & Smith. |      |     |
| Ball & Gammon, Strood  | £575 | 0 0 |
| Clements, Maidstone  | 519  | 0 0 |
| Farrow, Maidstone  | 490  | 0 0 |
| STOCKING & Co., Strood (accepted)  | 485  | 7 0 |

## DEPTFORD.

|   |        |     |
|---|--------|-----|
| For Erection of Warehouse for Messrs. Dandridge, Church Street, Deptford. Mr. J. J. DOWNS, Architect. |        |     |
| Jerrard   | £2,800 | 0 0 |
| Redman  | 2,637  | 0 0 |
| Lordon & Son  | 2,079  | 0 0 |
| HOLLOWAY (accepted)   | 1,967  | 0 0 |

## GATESHEAD.

|   |      |      |
|---|------|------|
| For Building Wesleyan Chapel and School, Team Colliery, Gateshead. Mr. WM. THOMPSON, Architect, 4 Western Terrace, Chester-le-Street. |      |      |
| T. Robson, Low Fell, near Gateshead   | £765 | 10 0 |
| Jennings, Chester-le-Street   | 380  | 0 0  |
| Reid, Low Fell  | 377  | 10 0 |
| Wakefield & Robson, Gateshead   | 330  | 10 0 |
| WATSON & ROBSON, Washington (accepted)  | 311  | 0 0  |

## GLANBRYDAN PARK.

For Additions to House and Stables, Glanbrydan Park, Carmarthenshire, for Mr. J. C. Richardson. Mr. T. W. WILLIAMS, Architect.

## Additions to House.

|                               |        |     |
|-------------------------------|--------|-----|
| Walkins & Jenkins, Swansea    | £2,681 | 0 0 |
| Gwyn, Sketty                  | 2,634  | 0 0 |
| Bowers & Co., Hereford        | 2,495  | 0 0 |
| WILLIAMS, Knighton (accepted) | 2,465  | 0 0 |

## Additions to Stables, &amp;c.

|                     |       |     |
|---------------------|-------|-----|
| Walkins & Jenkins   | 1,600 | 0 0 |
| Gwyn                | 1,511 | 0 0 |
| Bowers & Co.        | 1,497 | 0 0 |
| WILLIAMS (accepted) | 1,495 | 0 0 |

## GLASGOW.

For Building Two Pavilions, Belvidere Hospital, Glasgow.

## Accepted Tenders.

|                           |        |       |
|---------------------------|--------|-------|
| Steven & Son, brickwork   | £2,539 | 0 0   |
| Buchanan, wright          | 1,667  | 19 10 |
| Combe & Son, heating      | 518    | 1 7   |
| Ferguson, plumber         | 408    | 18 0  |
| Linton, plasterer         | 302    | 15 7  |
| Black, slater             | 218    | 2 0   |
| Carlton & Son, painter    | 105    | 0 0   |
| Cant, gasfitter           | 90     | 13 4  |
| Mackie & Millar, tilework | 64     | 11 11 |

## All of Glasgow.

## GRIMSBY.

For Road Formation and Sewerage Works, Welsby, Grimsby. Mr. WM. WALLER, Engineer, 174 Hainton Street, Grimsby.

|                                |        |      |
|--------------------------------|--------|------|
| Corringham, Grimsby            | £2,905 | 16 0 |
| James, Cleethorpes             | 2,559  | 0 0  |
| Simons, Grimsby                | 2,520  | 0 0  |
| Cook, Bennett & Thew, Spalding | 2,432  | 10 0 |
| Reggall & Hewrins, Grimsby     | 2,356  | 0 0  |
| Pearson, Hull                  | 2,082  | 19 2 |
| Bradley, Lincoln               | 2,054  | 15 0 |
| J. & T. Binns, Lincoln         | 1,877  | 0 0  |
| MATHER, Hull (accepted)        | 1,806  | 16 0 |
| Dawson, Lincoln (withdrawn)    | 1,630  | 0 0  |
| Engineer's estimate            | 2,160  | 0 0  |

## GLOUCESTER.

For Building Railway Goods Shed, Gloucester. CLARIDGE, Banbury (accepted).

## GREAT YARMOUTH.

For Building Small Residence in Fen Street, Southtown. Mr. H. D. ARNOTT, Architect and Surveyor, Gorleston.

|                               |      |      |
|-------------------------------|------|------|
| Brown, Braintree, Essex       | £385 | 0 0  |
| Burton, Hemsby                | 383  | 10 0 |
| Bray, Yarmouth                | 375  | 0 0  |
| LEGGETT, Gorleston (accepted) | 349  | 0 0  |
| Barnard, Gorleston            | 327  | 0 0  |

For Additions to Infirmary Wards and New West Boundary Wall Railing and Gates at the Great Yarmouth Workhouse, for the Guardians of the Poor of the Parish of Great Yarmouth. Messrs. BOTTLE & OTLEY, Architects, Great Yarmouth.

## Infirmary Wards.

|                         |        |      |
|-------------------------|--------|------|
| Rand & Cooper           | £2,288 | 0 0  |
| Leggett                 | 2,281  | 0 0  |
| Cooper                  | 2,188  | 0 0  |
| Bray                    | 2,150  | 0 0  |
| Howes                   | 2,150  | 0 0  |
| CORK & BEECH (accepted) | 2,094  | 10 0 |

## Wall.

|                  |     |      |
|------------------|-----|------|
| Bray             | 449 | 0 0  |
| Flaxman          | 409 | 10 0 |
| Leggett          | 400 | 0 0  |
| HOWES (accepted) | 398 | 0 0  |
| Cork & Beech     | 395 | 0 0  |

## HALIFAX.

For Private Street Improvement Works, Halifax.

## Williamson Street.

|                                    |     |     |
|------------------------------------|-----|-----|
| Bateman, Wyke                      | £74 | 0 0 |
| Hopkinson, Halifax                 | 69  | 0 0 |
| Dewhurst, Halifax                  | 67  | 0 0 |
| Bedford, King Cross, Halifax       | 64  | 0 0 |
| Hudson, Boothtown, Halifax         | 64  | 0 0 |
| Kendall, Whitegate, Halifax        | 64  | 0 0 |
| Mann, Stannway, Halifax            | 62  | 0 0 |
| Tyson & Son, Halifax               | 61  | 0 0 |
| DARNES, Siddal, Halifax (accepted) | 60  | 0 0 |
| Estimate                           | 63  | 0 0 |

## ARTISTIC ♦ VENTILATION. ❀



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"November 11, 1881.

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SHOP AND OFFICE FITTERS, EXHIBITION STANDS, AND CABINET WORK



**HALIFAX—continued.***Hartley Street.*

|  |     |   |   |
|--|-----|---|---|
| Bateman, Wyke . . . . .                      | £82 | 0 | 0 |
| Hopkinson, Halifax . . . . .                 | 72  | 0 | 0 |
| Tyson & Son, Halifax . . . . .               | 69  | 0 | 0 |
| Dewhurst, Halifax . . . . .                  | 69  | 0 | 0 |
| Hudson, Boothtown, Halifax . . . . .         | 65  | 0 | 0 |
| Kendall, Whitegate, Halifax . . . . .        | 66  | 0 | 0 |
| Bedford, King Cross, Halifax . . . . .       | 63  | 0 | 0 |
| Mann, Stannway, Halifax . . . . .            | 62  | 0 | 0 |
| DAENES, Siddal, Halifax (accepted) . . . . . | 61  | 0 | 0 |
| Estimate . . . . .                           | 66  | 0 | 0 |

**KIRRIEMUIR.**

For Road Works, for the Forfar District Road Trustees.

*Accepted Tenders.*

|  |      |    |    |
|--|------|----|----|
| Mann, North Kirriemuir . . . . .                 | £349 | 12 | 6  |
| Brown, Inverarity . . . . .                      | 282  | 12 | 6  |
| Kinnison, Eassie . . . . .                       | 281  | 1  | 8  |
| Turnbull, Airlie and Ruthven . . . . .           | 202  | 13 | 4  |
| Fife, Rescobie . . . . .                         | 194  | 2  | 1  |
| Hutchison, Glamis . . . . .                      | 187  | 18 | 4  |
| M'Laren, Dunnichon . . . . .                     | 179  | 15 | 10 |
| Kinnear, South Forfar . . . . .                  | 165  | 15 | 0  |
| Fife, North Forfar . . . . .                     | 162  | 9  | 2  |
| Lundie & McIntosh, Lintrathen . . . . .          | 130  | 5  | 10 |
| In Surveyor's hands, Glenisla District . . . . . | 119  | 10 | 1  |
| Ogilvie, South Kirriemuir . . . . .              | 111  | 16 | 8  |
| M'Donald, Kingoldrum . . . . .                   | 105  | 15 | 0  |
| Mann, Cortachy and Clooa . . . . .               | 87   | 8  | 4  |
| Callendar, Kinnittles . . . . .                  | 85   | 10 | 10 |
| M'Nicol, Glenprosen . . . . .                    | 72   | 10 | 0  |

Total . . . . . £2,718 17 1

**LLANDRINDOD WELLS.**

For House at Llandrindod Wells, for Mr. Thos. Wilkins. Mr. T. W. WILLIAMS, Architect. Quantities not supplied.

|                            |      |   |   |
|----------------------------|------|---|---|
| Davies . . . . .           | £790 | 0 | 0 |
| T. Williams . . . . .      | 769  | 0 | 0 |
| Davies & Bethell . . . . . | 740  | 0 | 0 |
| J. WILLIAMS* . . . . .     | 593  | 0 | 0 |
| Owen & Bufton . . . . .    | 585  | 0 | 0 |

\* Accepted at £500, omitting Scullery and using Gault Bricks instead of Ruabon Bricks.

**LEICESTER.**

For the Supply and Erection of Two Boilers, 7 feet diameter and 30 feet long, with Two Internal Flues to each Boiler, for the Borough Lunatic Asylum, Leicester. Specifications by Mr. J. Gordon, C.E., Borough Surveyor.

|  | Boiler plates. | Steel. |
|--|----------------|--------|
| Galloway & Sons, Manchester . . . . .          | £775           | 0      |
| Adamson & Co., Hyde, near Manchester . . . . . | 762            | 0      |
| Death & Ellwood, Leicester . . . . .           | 757            | 10     |
| Coleman, Loughborough . . . . .                | 620            | 0      |
| GIMSON & Co., Leicester (accepted) . . . . .   | 615            | 0      |

For the Supply and Erection of a Boiler, 7 feet diameter and 30 feet long, with Two Internal Flues, and all necessary Mountings and Fittings, for the Sewage Works at Leicester. Specification by Mr. J. Gordon, C.E., Borough Surveyor.

|  | Boiler plates. | Steel. |
|--|----------------|--------|
| Adamson & Co., Hyde . . . . .                | £430           | 0      |
| Death & Ellwood, Leicester . . . . .         | 400            | 0      |
| Galloway & Sons, Manchester . . . . .        | 385            | 0      |
| Coleman, Loughborough . . . . .              | 365            | 0      |
| GIMSON & Co., Leicester (accepted) . . . . . | 315            | 0      |

**LLANYRE.**

For Building Parish Church, Llanyre. Mr. T. W. WILLIAMS, Architect. Quantities by the Architect.

|   |        |   |   |
|---|--------|---|---|
| Jones & Co., Gloucester . . . . .       | £3,379 | 0 | 0 |
| Price & Deakins, Knucklass . . . . .    | 2,498  | 0 | 0 |
| Morgan, Kingston . . . . .              | 2,480  | 0 | 0 |
| Davies & Son, Newtown . . . . .         | 2,421  | 0 | 0 |
| Treasure & Son, Shrewsbury . . . . .    | 2,360  | 0 | 0 |
| Bowers & Co., Hereford . . . . .        | 2,341  | 0 | 0 |
| WILLIAMS, Knighton (accepted) . . . . . | 2,171  | 0 | 0 |
| Meredith, Llanidloes . . . . .          | 2,147  | 0 | 0 |

**LONDON.**

For Building Stabling, &amp;c., at Broad Street, Ratcliff, E. Mr. W. DUNCH, Architect.

|                           |        |   |   |
|---------------------------|--------|---|---|
| Curtis . . . . .          | £1,416 | 0 | 0 |
| Shurmur . . . . .         | 1,377  | 0 | 0 |
| F. & F. J. Wood . . . . . | 1,374  | 0 | 0 |
| Palmer . . . . .          | 1,345  | 0 | 0 |
| Woodward . . . . .        | 1,320  | 0 | 0 |
| Taylor . . . . .          | 1,209  | 0 | 0 |

For the Erection of Three Houses and Shops on site of No. 54 Essex Road, Islington, for Mr. A. Clifford. Mr. J. B. WALL, A.R.I.B.A., Architect. No quantities.

|                              |        |   |   |
|------------------------------|--------|---|---|
| Bridgman . . . . .           | £3,495 | 0 | 0 |
| Sabey & Son . . . . .        | 3,490  | 0 | 0 |
| Higgs . . . . .              | 3,479  | 0 | 0 |
| Kirk . . . . .               | 3,477  | 0 | 0 |
| Redman . . . . .             | 3,079  | 0 | 0 |
| Jackson & Todd . . . . .     | 3,079  | 0 | 0 |
| Salt . . . . .               | 3,045  | 0 | 0 |
| Holloway (amended) . . . . . | 2,975  | 0 | 0 |

For Alterations, Reseating, &amp;c., at Commercial Road Baptist Chapel. Mr. H. T. A. CHIDGEY, Surveyor, 1 Vine Street, Minories, E.C. Quantities supplied.

|                               |        |   |   |
|-------------------------------|--------|---|---|
| Calnan . . . . .              | £1,273 | 0 | 0 |
| Holland . . . . .             | 1,238  | 0 | 0 |
| Wood . . . . .                | 1,180  | 0 | 0 |
| Falkner . . . . .             | 1,175  | 0 | 0 |
| Nixon . . . . .               | 1,174  | 0 | 0 |
| Hewlitt (withdrawn) . . . . . | 987    | 0 | 0 |

*New Gallery Front.*

|                   |     |   |   |
|-------------------|-----|---|---|
| Calnan . . . . .  | 105 | 0 | 0 |
| Nixon . . . . .   | 90  | 0 | 0 |
| Holland . . . . . | 85  | 0 | 0 |
| Falkner . . . . . | 82  | 0 | 0 |
| Wood . . . . .    | 65  | 0 | 0 |
| Hewlitt . . . . . | 54  | 0 | 0 |

*New Coping.*

|                   |    |    |   |
|-------------------|----|----|---|
| Calnan . . . . .  | 70 | 0  | 0 |
| Nixon . . . . .   | 27 | 15 | 0 |
| Holland . . . . . | 20 | 0  | 0 |
| Falkner . . . . . | 18 | 0  | 0 |
| Wood . . . . .    | 15 | 0  | 0 |
| Hewlitt . . . . . | 12 | 0  | 0 |

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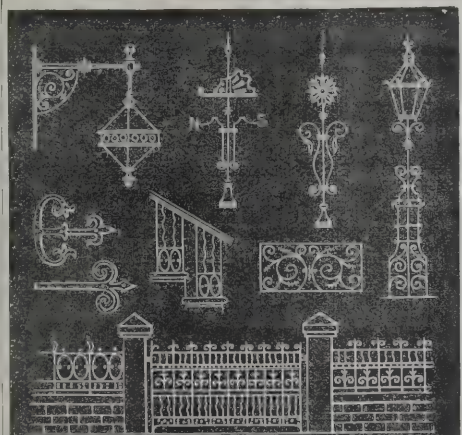
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## LONDON—continued.

For Rebuilding the King's Head Public-house, and for Four Houses and Shops in Church Street and Church Street North, West Ham, E., for Messrs. Charrington & Co. Mr. JOHN HUDSON, Architect, 80 Leman Street, E. Quantities by Mr. E. Stanger.

|  |        |   |   |
|--|--------|---|---|
| F. & F. J. Wood, Mile End              | £7,446 | 0 | 0 |
| Outhwaite & Son, Upper East Smithfield | 6,777  | 0 | 0 |
| Little, Whitechapel                    | 6,522  | 0 | 0 |
| J. & H. Cocks, Mile End                | 6,145  | 0 | 0 |
| Norton & Son, Stratford                | 6,068  | 0 | 0 |
| BENTLEY, Waltham Abbey (accepted)      | 5,923  | 0 | 0 |

For the Erection of Headquarters and Drill Hall, Adam and Eve Yard, High Street, Kensington, for the 4th Middlesex (West London) Rifle Volunteers. Mr. ALFRED J. HOPKINS, Architect, 10 Berners Street. Quantities supplied.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Miller & Brown          | £3,450 | 0 | 0 |
| Bartlett & Hawkins      | 2,900  | 0 | 0 |
| Hayward Bros. (Limited) | 2,860  | 0 | 0 |
| Ashwell                 | 2,777  | 0 | 0 |
| Mattock Bros.           | 2,693  | 0 | 0 |
| Lascelles & Co.         | 2,686  | 0 | 0 |
| Patman & Fotheringham   | 2,645  | 0 | 0 |
| CHAPPELL (accepted)     | 2,429  | 0 | 0 |
| Architect's estimate    | 2,500  | 0 | 0 |

For Alterations to the Nottingham Castle, Nine Elms, S.E. Mr. W. T. FARTHING, Architect.

|               |      |   |   |
|---------------|------|---|---|
| Royal         | £760 | 0 | 0 |
| Birch & Co.   | 647  | 0 | 0 |
| Shurmur       | 585  | 0 | 0 |
| Gill          | 547  | 0 | 0 |
| Millson       | 519  | 0 | 0 |
| Beale         | 492  | 0 | 0 |
| Spencer & Co. | 475  | 0 | 0 |

For Restoration of Premises, No. 376 Mile End Road, for Mr. D. SAXBY. Mr. J. B. WALL, A.R.I.B.A., Architect.

HEAD, South Hackney (accepted) £229 10 0

## LONDON—continued.

For Enlargement of Board School, Morden Terrace, Islington. Mr. BAILEY, Architect.

|                       |        |   |   |
|-----------------------|--------|---|---|
| F. & F. J. Wood       | £3,134 | 0 | 0 |
| Reading               | 2,840  | 0 | 0 |
| Outhwaite & Son       | 2,776  | 0 | 0 |
| Larke & Son           | 2,769  | 0 | 0 |
| Patman & Fotheringham | 2,760  | 0 | 0 |
| Grover & Son          | 2,749  | 0 | 0 |
| Lathey Bros.          | 2,730  | 0 | 0 |
| W. & F. Croaker       | 2,716  | 0 | 0 |
| Howell & Son          | 2,666  | 0 | 0 |
| Johnson               | 2,654  | 0 | 0 |
| Kirk & Randall        | 2,606  | 0 | 0 |
| Holloway              | 2,587  | 0 | 0 |
| Stimpson & Co.        | 2,560  | 0 | 0 |
| Atherton & Latta      | 2,550  | 0 | 0 |
| Jerrard               | 2,544  | 0 | 0 |
| Cox                   | 2,544  | 0 | 0 |
| Turtle & Appleton     | 2,425  | 0 | 0 |

For Enlargement of Board School, Dempsey Street, Stepney. Mr. BAILEY, Architect.

|                  |        |   |   |
|------------------|--------|---|---|
| F. & F. J. Wood  | £1,802 | 0 | 0 |
| Goodman          | 1,773  | 0 | 0 |
| Holloway         | 1,700  | 0 | 0 |
| Reading          | 1,608  | 0 | 0 |
| Palmer & Co.     | 1,618  | 0 | 0 |
| Outhwaite & Son  | 1,612  | 0 | 0 |
| Howell & Son     | 1,594  | 0 | 0 |
| Shurmur          | 1,593  | 0 | 0 |
| Prichard         | 1,593  | 0 | 0 |
| Perry & Co.      | 1,590  | 0 | 0 |
| Lathey Bros.     | 1,589  | 0 | 0 |
| Kirk & Randall   | 1,580  | 0 | 0 |
| Hunt             | 1,575  | 0 | 0 |
| Holloway Bros.   | 1,561  | 0 | 0 |
| Grover & Son     | 1,535  | 0 | 0 |
| Atherton & Latta | 1,495  | 0 | 0 |
| Jerrard          | 1,489  | 0 | 0 |
| Stimpson & Co.   | 1,470  | 0 | 0 |
| Cox              | 1,447  | 0 | 0 |

For Fitting-up Laundry at the Brentwood Industrial School.

|        |      |    |   |
|--------|------|----|---|
| Rayner | £150 | 0  | 0 |
| Cannon | 143  | 15 | 0 |
| Robey  | 127  | 0  | 0 |
| Dodson | 118  | 0  | 0 |

## LONDON—continued.

For Waterclosets and Storeroom at Board School, Blundell Street.

|                |      |   |   |
|----------------|------|---|---|
| Hornett        | £107 | 0 | 0 |
| Williams & Son | 93   | 0 | 0 |
| Pritchard      | 93   | 0 | 0 |
| Dearing        | 88   | 0 | 0 |

Consideration postponed.

For Repairs to School-keeper's House, Penton Grove Board School.

|                  |     |    |   |
|------------------|-----|----|---|
| Williams & Son   | £41 | 0  | 0 |
| McCormick & Sons | 29  | 10 | 0 |
| Hornett          | 29  | 0  | 0 |

For Altering Windows, Burghley Road Board School.

|            |     |   |   |
|------------|-----|---|---|
| Hornett    | £85 | 0 | 0 |
| Wall Bros. | 78  | 0 | 0 |
| Williams   | 77  | 0 | 0 |

For Removing and Re-erecting Iron Buildings, Langford Road Board School.

|                 |      |   |   |
|-----------------|------|---|---|
| Pritchard & Son | £415 | 0 | 0 |
| Shurmur         | 388  | 0 | 0 |
| Oldrey          | 335  | 0 | 0 |
| Johnson         | 309  | 0 | 0 |

For Removing and Re-erecting Iron Buildings, Halford Road Board School.

|                  |      |   |   |
|------------------|------|---|---|
| Jerrard          | £250 | 0 | 0 |
| Atherton & Latta | 245  | 0 | 0 |
| Shurmur          | 227  | 0 | 0 |
| Johnson          | 195  | 0 | 0 |
| Oldrey           | 170  | 0 | 0 |

For Altering Shop Front and for New Fittings to Shop adjoining the Rock House Hotel, Battersea Park Road, for Mr. E. Purchase.

Mr. H. I. NEWTON, Architect, 17 Queen Anne's Gate, Westminster.

|                |      |    |   |
|----------------|------|----|---|
| Beales         | £236 | 0  | 0 |
| Cowdry & Eaton | 196  | 0  | 0 |
| Walker         | 186  | 15 | 0 |

For Alterations to Erich Lodge, Dulwich Common, for Mr. W. F. Hammond. Mr. H. I. NEWTON, Architect, 17 Queen Anne's Gate, Westminster.

|                 |        |   |   |
|-----------------|--------|---|---|
| Lamble          | £1,253 | 0 | 0 |
| Godden          | 1,198  | 0 | 0 |
| COOK (accepted) | 1,119  | 0 | 0 |






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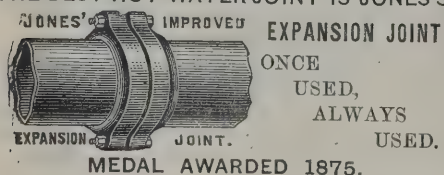
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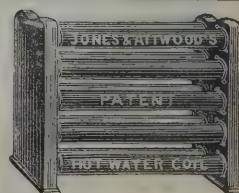
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 For CHURCHES,  
 SCHOOLS,  
 MANSIONS,  
 PUBLIC BUILDINGS,  
 &c.



SILVER MEDAL, 1881.



## LONDON—continued.

For Constructing Additional Lavatories, Bath-rooms and Relief Offices at the Work-house, Tanner Street, Bermondsey, for the Guardians of the Poor of the St. Olaves' Union. Messrs. H. SAXON SNELL & SON, Architects, London.

|                  |        |   |   |
|------------------|--------|---|---|
| Bamford          | £2,209 | 0 | 0 |
| Wall Bros.       | 2,118  | 0 | 0 |
| Batchelder       | 1,997  | 0 | 0 |
| White & Co.      | 1,989  | 0 | 0 |
| Bullers          | 1,978  | 0 | 0 |
| Foster & Dicksee | 1,885  | 0 | 0 |
| Harris & Wardrop | 1,833  | 0 | 0 |
| Chafen           | 1,817  | 0 | 0 |
| Roberts          | 1,802  | 0 | 0 |
| Holloway         | 1,700  | 0 | 0 |
| Brockwell & Sons | 1,539  | 0 | 0 |

For Alterations to the Northumberland Club, 40 West Strand. Messrs. HOOKER & HEMINGS, Architects. Quantities by Messrs. J. & A. E. Bull.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Longmire & Burge        | £1,670 | 0 | 0 |
| Hack                    | 1,581  | 0 | 0 |
| Scrivener & Co.         | 1,569  | 0 | 0 |
| MACEY & SONS (accepted) | 1,573  | 0 | 0 |

For Alterations and Repairs to the Rising Sun Public-house, Anerley Road, for Mr. C. Davey. Mr. J. B. WALL, A.R.I.B.A., Architect.

|                                  |      |   |   |
|----------------------------------|------|---|---|
| Adam                             | £179 | 0 | 0 |
| Flynn                            | 163  | 0 | 0 |
| BARTON & SON, Croydon (accepted) | 132  | 0 | 0 |

For Erection of Billiard-room, at the Conservative Club, New Cross Road, for the Conservative Club Company, Limited. Mr. J. B. WALL, A.R.I.B.A., Architect.

|          |      |   |   |
|----------|------|---|---|
| Holloway | £550 | 0 | 0 |
|----------|------|---|---|

For Heating by High Pressure Small Tube Hot-water Heating Apparatus, 11 Parliament Hill Road, Hampstead, N.W.  
BACON & Co., London (accepted).

For Extending Hot-water Heating Apparatus at "Blairhyrne," Hampstead, N.W.  
BACON & Co., London (accepted).

## MAIDSTONE.

For Building Warehouse at Under-the-Cliffe, Maidstone. Messrs. RUCK, SON & SMITH, Architects, Maidstone. Quantities supplied.

|                   |      |   |   |
|-------------------|------|---|---|
| Elmore            | £680 | 0 | 0 |
| Bridge            | 670  | 0 | 0 |
| Vaughan           | 657  | 0 | 0 |
| Cox Bros.         | 625  | 0 | 0 |
| Gray              | 625  | 0 | 0 |
| Wallis & Clements | 615  | 0 | 0 |
| AVARD (accepted)  | 610  | 0 | 0 |

All of Maidstone.

For Alterations and Additions to Business Premises, West Borough, Maidstone, for Messrs. A. F. Style & Co. Messrs. RUCK, SON & SMITH, Architects, Maidstone.

|                    |      |   |   |
|--------------------|------|---|---|
| Elmore             | £460 | 0 | 0 |
| Wallis & Clements  | 456  | 0 | 0 |
| Cox Bros.          | 447  | 0 | 0 |
| VAUGHAN (accepted) | 437  | 0 | 0 |

All of Maidstone.

For Entrance Lodge at Mereworth Castle, Kent, for the Right Hon. Viscount Falmouth. Messrs. RUCK, SON & SMITH, Architects, Maidstone. Quantities supplied.

|   |      |    |   |
|---|------|----|---|
| Wells, Wateringbury                     | £531 | 0  | 0 |
| WALLIS & CLEMENTS, Maidstone (accepted) | 442  | 10 | 0 |

## NORWOOD.

For Building Five Houses at Norwood Junction. Messrs. CANE, WOTTON & Co., Surveyors, Rye Lane Railway Station, Peckham.

|                   |        |    |   |
|-------------------|--------|----|---|
| Dean              | £1,300 | 0  | 0 |
| Saunders & Co.    | 1,235  | 0  | 0 |
| Barton & Son      | 1,206  | 10 | 0 |
| Warr & Co.        | 1,177  | 0  | 0 |
| Hubble & Trott    | 1,175  | 0  | 0 |
| Couzens & Co.     | 1,155  | 0  | 0 |
| Holden            | 1,115  | 0  | 0 |
| Holt              | 1,100  | 0  | 0 |
| MOODY (accepted)  | 1,050  | 0  | 0 |
| Lee & Gieves      | 1,025  | 0  | 0 |
| Horne, Fenn & Co. | 1,003  | 0  | 0 |
| Taylor            | 649    | 0  | 0 |

## MOTTRAM.

For New Choir Stalls (Riga Oak) to Chancel of Mottram Church, near Manchester. Messrs. WEAVER & ADYE, Architects, Devizes, and Bradford-on-Avon, Wilts.

|                               |      |    |   |
|-------------------------------|------|----|---|
| Goodall & Co., Manchester     | £190 | 0  | 0 |
| Statham & Sons, Pendleton     | 185  | 0  | 0 |
| ROBINSON, Hyde (accepted)     | 145  | 0  | 0 |
| Larmuth & Sidebotham, Salford | 135  | 13 | 0 |
| Grant, Torrington             | 127  | 7  | 0 |

## NEW QUAY.

For Building Two Shops, New Quay, for Miss G. C. Wallis. Mr. ALBERT H. CLEMENS, Architect, Truro.

|                        |        |    |   |
|------------------------|--------|----|---|
| Ennor, New Quay        | £1,050 | 0  | 0 |
| Libby, New Quay        | 1,025  | 0  | 0 |
| JOSE, Truro (accepted) | 827    | 12 | 0 |

## ORRELL.

For Plastering, Plumbing, Painting, and Glazing at Houses Erecting at Orrell, near Wigan. Mr. JOSEPH ROTHWELL, Architect, Ormskirk.

|                              |      |    |   |
|------------------------------|------|----|---|
| Collier, Wigan               | £413 | 0  | 0 |
| Molyneux, Southport          | 366  | 11 | 4 |
| Jackson & Son, Orr.          | 360  | 0  | 0 |
| Swarbrick, Preston           | 324  | 0  | 0 |
| Marsden, Wigan               | 316  | 0  | 0 |
| T. Riding & Son, Ormskirk    | 305  | 0  | 0 |
| H. Riding, Ormskirk          | 300  | 0  | 0 |
| Poppleston, Wigan            | 299  | 16 | 0 |
| BALSHAW, Ormskirk (accepted) | 282  | 10 | 0 |

Plumbing, Painting, and Glazing only.

|                      |     |    |   |
|----------------------|-----|----|---|
| Dyson, Skelmersdale  | 280 | 0  | 0 |
| Rowbottom, Upholland | 276 | 10 | 6 |
| Marsh, Skelmersdale  | 252 | 0  | 0 |
| Salisbury, Ormskirk  | 238 | 8  | 0 |

Plastering only.

|                            |     |    |   |
|----------------------------|-----|----|---|
| Moran, Upholland           | 137 | 10 | 0 |
| Southworth & Rhodes, Wigan | 116 | 0  | 0 |
| Swarbrick, Preston         | 105 | 0  | 0 |
| Wright, Southport *        | 92  | 10 | 0 |

\* Accepted with Balshaw's tender for plumbing, painting, and glazing.

# WALTER JONES, MAGNET WHARF, BOW BRIDGE,

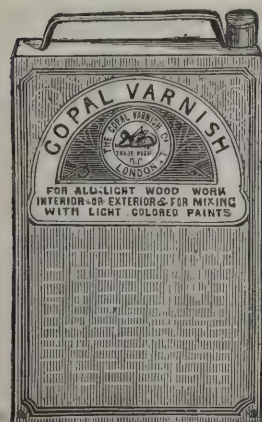
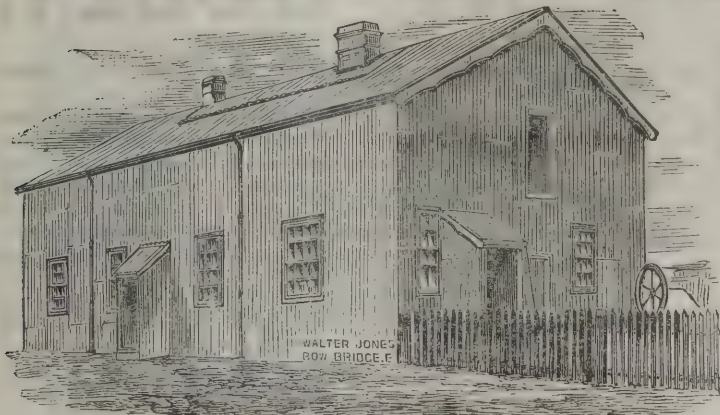
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| MENSTON.  |          |     |
|---|----------|-----|
| For Building County Asylum at Menston.              |          |     |
| WOOD & SONS, Leeds (accepted)                       | £140,737 | 0 0 |
| OLDBURY.  |          |     |
| For Restoring Church, Oldbury-on-Severn.            |          |     |
| Messrs. WALLER, SON & WOOD, Architects, Gloucester. |          |     |
| Jones & Co.   | £2,289   | 0 0 |
| Roach & Sons  | 1,944    | 0 0 |
| King  | 1,888    | 0 0 |
| Bruton  | 1,663    | 0 0 |
| Wilkins   | 1,640    | 0 0 |
| Restall & Son                                       | 1,639    | 0 0 |
| Wall & Hook   | 1,540    | 0 0 |
| Davis   | 1,495    | 0 0 |
| Lewis   | 1,447    | 0 0 |
| GYDE (accepted)                                     | 1,421    | 0 0 |

| SANDBACH.   |      |      |
|---|------|------|
| For Restoration of the Hassall Green Wesleyan Chapel, Sandbach. |      |      |
| Smallwood   | £175 | 0 0  |
| Mellor  | 155  | 0 0  |
| Latham  | 129  | 16 0 |
| Martin  | 123  | 0 0  |
| COTTERILL (accepted)  | 123  | 0 0  |
| Painting, &c.   |      |      |
| BUCKLEY (accepted)  | 31   | 13 6 |

| SCARBOROUGH.  |        |     |
|---|--------|-----|
| For House, Farm Buildings, and Lodge at Scalby Bridge, for Mr. Edwin Brough. Messrs. W. SUGDEN & SON, Architects, Leek. |        |     |
| Bromage   | £3,145 | 0 0 |
| J. Bland  |        |     |
| S. Bland  |        |     |

| SEVENOAKS.   |  |  |
|--|--|--|
| For Alterations and Additions to Stables, Oak Bank, for Mr. James Alexander, Sevenoaks. Messrs. HOOKER & HEMINGS, Architects.          |  |  |
| WILTSHIRE, Sevenoaks (accepted).   |  |  |
| For Sundry Works in making good after late fire to Oak Bank, Sevenoaks, for Mr. James Alexander. Messrs. HOOKER & HEMINGS, Architects. |  |  |
| WILTSHIRE, Sevenoaks (accepted).   |  |  |

| SHEDFIELD.  |        |      |
|---|--------|------|
| For Building Vicarage House, Stabling, &c., Shedfield, Hants. |        |      |
| Knight, Wickham   | £2,320 | 0 0  |
| Davy, Wickham   | 2,314  | 0 0  |
| Light, Portsmouth   | 2,029  | 4 2  |
| Claridge, Banbury   | 2,007  | 0 0  |
| Goddard, Farnham  | 1,963  | 0 0  |
| Sanders, Southampton  | 1,939  | 0 0  |
| Bull & Sons, Southampton                                      | 1,880  | 0 0  |
| Crook, Southampton  | 1,878  | 1 0  |
| Green, Meonstoke  | 1,864  | 0 0  |
| Corke, Southsea   | 1,850  | 0 0  |
| Conway, Wickham   | 1,832  | 17 6 |
| Franklin, Southampton   | 1,811  | 10 5 |
| Stallard, Havant  | 1,785  | 0 0  |
| TOMPSETT & KINGHAM, Farnham (accepted)                        | 1,782  | 0 0  |

| SHREWSBURY.   |        |      |
|---|--------|------|
| For Building Church at Bicton, near Shrewsbury. Mr. A. E. LLOYD OSWELL, A.R.I.B.A., Architect, Dana Chambers, Shrewsbury. |        |      |
| Church.   |        |      |
| Warburton, Manchester   | £2,948 | 0 0  |
| Foster & Dicksee, Rugby   | 2,810  | 0 0  |
| Hughes & Owen, Wrexham  | 2,632  | 15 0 |
| Gethin, Shrewsbury  | 2,590  | 0 0  |
| Bowdler, Shrewsbury   | 2,484  | 0 0  |
| Everall & Morris, Shrewsbury  | 2,414  | 0 0  |
| Price, Shrewsbury   | 2,280  | 0 0  |
| J. & G. J. GROVES, Shrewsbury (accepted)  | 2,233  | 0 0  |

| Tower.                       |     |      |
|------------------------------|-----|------|
| Foster & Dicksee             | 841 | 0 0  |
| Warburton                    | 813 | 0 0  |
| Gethin                       | 700 | 0 0  |
| Hughes & Owen                | 665 | 2 1  |
| Bowdler                      | 660 | 0 0  |
| Everall & Morris             | 644 | 10 5 |
| Price                        | 537 | 0 0  |
| J. & G. J. GROVES (accepted) | 537 | 0 0  |

| ST. LEONARDS-ON-SEA.  |  |  |
|---|--|--|
| For Repairs, &c., at Premises known as Spring Hill Lodge, St. Leonards. Mr. A. W. CROSS, A.R.I.B.A., Architect, Hastings. |  |  |
| SHORTELL (accepted).  |  |  |

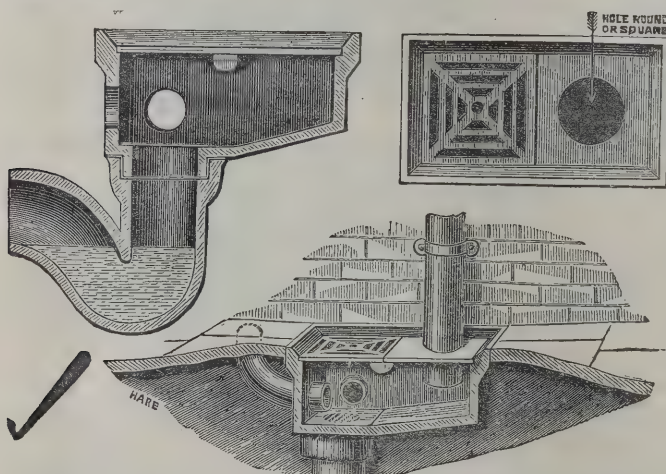
| STAFFORD.  |      |      |
|--|------|------|
| For Construction of Roof of St. John's Market Hall, Stafford.  |      |      |
| WOOLLAMS (accepted)  | £520 | 0 0  |
| Five tenders received.   |      |      |
| For Construction of Purifiers for the Gas Committee, Stafford. |      |      |
| C. & W. WALKER, Donnington (accepted)                          | £792 | 0 0  |
| Twenty-one tenders received.                                   |      |      |
| For Valves for Purifiers for the Gas Committee, Stafford.      |      |      |
| BLAKEBOROUGH & SONS (accepted)                                 | £256 | 10 0 |
| Four tenders received.   |      |      |

| SWANSEA.   |        |      |
|--|--------|------|
| For New Shop and Warehouse, with Cost of Girders added, for Messrs. Taylor & Co., Castle Square, Swansea. Mr. T. P. MARTIN, Architect. |        |      |
| Morgan, Swansea  | £3,430 | 0 0  |
| Thomas, Watkins & Jenkins, Swansea   | 3,414  | 0 0  |
| David & Richards, Swansea  | 3,357  | 14 0 |
| Billings, Swansea  | 3,282  | 10 0 |
| Jones, Gloucester  | 3,189  | 0 0  |
| Loveday & Co., Swansea   | 3,014  | 0 0  |
| For Additions to the Royal Hotel, High Street, Swansea. Mr. T. P. MARTIN, Architect, Swansea. Quantities by the Architect.             |        |      |
| Thomas, Watkins & Jenkins, Swansea   | £500   | 0 0  |
| David & Richards, Swansea  | 464    | 16 0 |
| Jones, Gloucester  | 425    | 0 0  |
| Morgan, Swansea  | 420    | 0 0  |
| Jones, Swansea   | 415    | 0 0  |
| Loveday & Co., Swansea   | 394    | 0 0  |
| White & Co., Swansea   | 390    | 0 0  |
| Williams, Swansea  | 365    | 10 0 |
| Billings, Swansea  | 360    | 15 0 |

| WEDNESBURY.   |        |     |
|---|--------|-----|
| For Carrying-out Sewerage Works (Contract No. 2), Wednesbury. |        |     |
| GLENFIELD & CO., Limited (accepted)                           | £3,510 | 0 0 |

## NOTICE OF REMOVAL.

# BELLMAN'S PATENT GULLY.



This Gully possesses the following advantages:—  
**Receives and disconnects one Rain-water Pipe and Three Waste Pipes.**

**Avoids all Splashing.** **Forms Drain for Area or Surface.**  
**Ventilates the Pipes and Trap.** **Is easy of Access for Clearance.**

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.

DESCRIPTIVE CIRCULAR ON APPLICATION.

**THIS GULLY IS HIGHLY RECOMMENDED by Authorities on Sanitary Matters.**

PRICE AT DEPOT:—EDWARD ST., DORSET SQUARE, N.W., 8s. 6d. each.

Also SINGLE GULLIES, for Sink Wastes only, price 3/9 each.

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## HIGH CLASS NON-ARSENICAL WALL PAPERS.

**WILLIAM COOKE & CO.,** Paperhangings Manufacturers, LEEDS, produce Papers of the Highest Class, and of the most Artistic Merit. They are **GUARANTEED FREE FROM ALL ARSENICAL COLOURINGS**; have been, and continue to be, tested and recommended by eminent analytical Authorities. — Pattern Books can be seen at all the Principal Decorators. N.B.—The Trade only supplied.

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For Mansions, Banks, Hotels, Houses, Offices, Yachts, House to Stable, and all purposes. LIGHTNING CONDUCTORS. FIRE TELEGRAPHS. SPEAKING TUBES.

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 FIRST PRIZE MEDALS from all the leading Exhibitions at Home and Abroad.



## NOTES ON NOVELTIES.

## Improved Building Paper.

The CHEMICAL PAPER'S COMPANY (Limited) of 3 Lombard Court, E.C., have appointed Messrs. Eastwood & Co. (Limited), Belvedere Road, S.E., their sole London agents for the valuable building paper manufactured by them. The improved building paper is designed to take the place of felts, canvas, and more expensive papers. Among its advantages are the following:—That it is extremely cheap, being 2d. per running yard, about 40 inches wide. Cleanliness, as compared with felt, because the hottest sun does not fry out the coal tar pitch with which it is impregnated, so that it retains a clean, hard surface. It is water and damp-proof, and the waterproofing material is throughout the entire texture of the paper, increasing its firmness and solidity, and making it thoroughly damp-proof; and, moreover, it is easy of joining, for by lapping the edges of the paper and applying hot coal tar pitch, a firm waterproof joint is made. These advantages suggest the adaptability of the paper for placing on damp walls, and walls from which it is difficult to prevent the paper peeling off. One reason for this peeling off—often overlooked—is the fermentation of the paste or other adhesive material used. This is usually due to a microscopic fungus growth readily developed wherever heat and moisture are present. A great advantage in the use of this paper in place of other damp-proof materials is that it possesses antiseptic properties preventive of the growth of vegetable fungi, and the consequent "spoiling" of the adhesive material and peeling off of the paper. It can be applied with any adhesive material used for ordinary papers direct to the walls, whether new or old, and the finest papers applied direct to its surface, and its superiority over most materials such as lead, paint, &c., especially recommend it for this purpose. The Paris Syndicate of Architects, the highest authority

in France, have recommended it after thorough tests. It is also most useful as a lining beneath tile and slate roofing. It makes the roof watertight and wind-tight, and lessens the conduction of heat or cold; also as a lining beneath weather boarding in all wooden houses, sheds, &c., to make wind and dust tight.

## TRADE NOTES.

MESSRS. FRANCIS & Co., Eagle Telegraph Works, Hatton Garden, E.C., have been successful in the competition for the complete installation of electric lighting throughout the new Congress Hotel and Avenue at Toronto, together with electric bells and indicators to and from each apartment of the several buildings, and direct telephonic communication between the hotel and the Dominion telegraph stations. This will be, perhaps, the most extensive application of domestic telegraphs in existence, and great credit is due to this enterprising firm in the success which has attended their efforts to outvie our keen rivals on the other side of the Atlantic.

THE interesting old Temple Church, London, has lately been enriched by a fine stained-glass window of more than usual interest, on account of its being a memorial to the last acting Master in Chancery, Mr. Charles Beavan, M.A. It consists of three lights, is on the north side next to the organ, and contains, as subjects, seven miracles of our Lord in medallions as follows:—The sight of the man who was born blind restored; the nobleman's son cured; the widow's son raised to life; the lame man at the pool of Bethesda healed; the demoniac boy cured; the woman with the issue of blood healed; and the ten lepers cleansed. The general groundwork of the window is formed of geometrical bands of colour and scroll ornament of tinted white glass, the whole having a chaste and light effect. At the base of the window the dedicatory inscription runs thus:—"In memory of Charles Beavan, M.A., of Gonville and Caius College, Cambridge, one of the Masters of the Bench of the Honour-

able Society of the Middle Temple, 1884." The window, though light, is rich in colour, is carefully drawn and painted, and was executed by Ward & Hughes, of Frith Street, Soho Square, London.

Two Munich stained-glass windows have just been erected in Newbattle Church, Dalkeith, in memory of the late Mr. Craig, representing the two acts of charity, "Feeding the Hungry" and "Teaching the Young." The artists are Messrs. Mayer & Co.

MESSRS. W. M. PEPPER & Co., stained glass manufacturers, have removed from their old address, No. 381 Euston Road, to larger and more suitable premises at No. 374. We understand that Mr. Boyes, who for some years has been connected with the firm, has now become a partner, so that in future the business will be carried on under the style of Pepper & Boyes.

MESSRS. WHITFIELD & Co., of Viaduct Works, Oxford Street, Birmingham, have received instructions to supply their patent screw bolt steel intersected doors to the whole of the new premises of the Birmingham Banking Company, now in course of erection at Bennett's Hill, Birmingham. The same firm have also received orders for a supply of similar doors for the Birmingham Art Gallery.

THE Birmingham Sanitary Association is engaged in remodelling the sanitary arrangements and applying their system of sewer ventilation to the following residences:—Manly Hall, Lichfield, for Mr. A. E. Manley, D.L.; Woodseat, Uttoxeter, for Mr. P. J. Campbell; and Oldsprings, Market Drayton, for Mr. E. Harding, J.P. The whole of the work has been executed under the personal direction of Mr. A. G. Wallis, the engineer to the Association.

THE directors of the Army and Navy Co-operative Society have accepted the tender of Messrs. R. Waygood & Co., Falmouth Road, S.E., for erecting four hydraulic goods hoists, each to lift 30 cwt. about 90 feet, with the necessary pumps, tanks, accumulators, &c., at their central depot, Francis Street, Westminster.

## THE "HARDING" VENTILATING COMPANY,

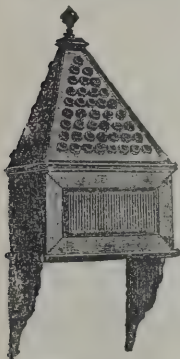
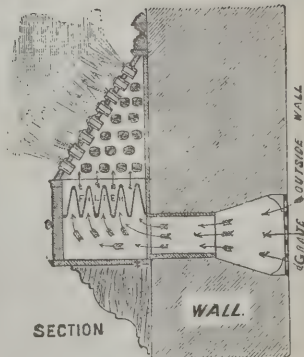
30 EAST PARADE, LEEDS.

HARDINGS' PATENT AIR DIFFUSER  
FOR VENTILATING ALL KINDS OF BUILDINGS.

Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus, we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 39 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



Diffuser with Filter.

**CHURCH WALL VENTILATOR.**—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

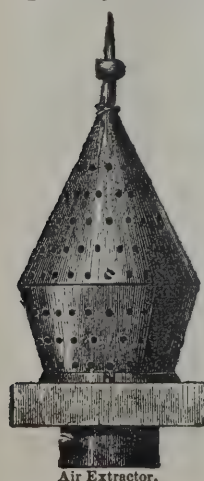
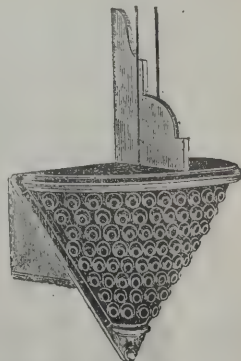
The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken of about it are well satisfied with it, and much pleased with the result."

**OUR PATENT EXTRACTOR** is the best in the Market, and is supplied at a very much lower price than any other.

**CHURCH WINDOW VENTILATOR.**—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.

"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.



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A reduction in price is made where a number of Diffusers is required.

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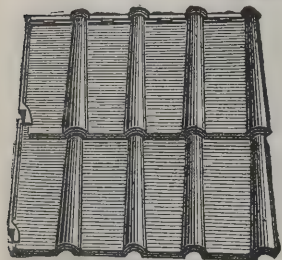


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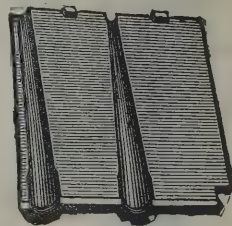
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# The Architect.

## THE WEEK.

MR. RUSKIN has announced that his resignation of the SLADE Professorship was caused by the vote endowing vivisection in the University, although when application was made for funds to build a well-lighted room for the undergraduates, apart from the obscure and inconvenient RUSKIN school, and to purchase for its furniture the two Yorkshire drawings by TURNER of *Crook of Lune* and *Kirby Lonsdale*, the grants were instantly refused on the plea of the University's being in debt.

THE Parks Committee of the Manchester Corporation do not appear to have acted generously in dealing with the Committee of the Art Museum. The latter body, after much trouble, brought together a collection of objects valued at 5,000*l.*, and they proposed to increase it until the value was double. The gift was offered to the Corporation, and accepted. Certain conditions were agreed upon, and it was decided that three large rooms were to be assigned to the collection in the new museum in Queen's Park. But the South Kensington authorities became generous in their offers, and it was found that three rooms were not available. One room was offered for the collection, and declined; then two rooms were given, with which the Committee were content, and finally an urgent request was made that the Art Museum Committee should again display self-sacrifice by renouncing one room. In the end rooms were found in the Ancoats Hall, which will be open on Sundays as well as in the evenings. It is likely that the Art Museum will not attract so many visitors in that place, but the Committee could not in justice to themselves do otherwise. The conclusion to be drawn from the transaction is that in planning museums it is absurd to think only of present necessities, and without a large margin for contingencies there is sure to be disappointment.

AN example has been set in Antwerp which deserves recognition. Every one has had his experience of the energy with which keepers of hotels and lodging-houses fleece strangers during exhibitions. The authorities in Antwerp, who wish to make their exhibition a success, have contrived to offer a protection to strangers. They have invited the inhabitants who are willing to let lodgings to furnish their names to a special committee. The houses have been examined, and those which were considered eligible have been registered. A tourist has only to inquire at the bureau in the Hôtel de Ville, and he will hear of lodgings from a franc and a half a night upwards, and for which the Municipality offers a sort of guarantee. Those who enjoy high prices can of course go elsewhere. Students can therefore enjoy RUBENS' pictures as well as the modern art in the exhibition without fear of bankruptcy.

It is anticipated in France that the French section will be the most attractive, but that is not an unusual state of mind before an exhibition opens. The Belgian pictures are well able to hold their own in a competition. It is well known that the committee of selection have been most rigorous, and hardly one in three of the pictures sent have been accepted.

WE mentioned lately that the Wolverhampton Town Council proposed to advertise for an art master for the Corporation School of Art, the salary at first to be 250*l.* per annum. One of the conditions proposed is, "that the person appointed be not permitted to hold any other appointment or to take private pupils, unless with the express permission of the General Purposes Committee," which materially diminishes the value of the appointment. It appears, however, that the master of the existing School of Art, Mr. A. GUNN, has held office for nearly thirty years, and a resolution was proposed that his claims should be first considered. By a majority of three the proposal was rejected, on the understanding that every opportunity should

be given to Mr. GUNN to become one of the candidates. There seems to be some doubt whether the superintendence of the Art Gallery should not devolve on the art master. Evidently the Town Council wish to get full value for their money.

AN Executive Committee has been formed at Peterborough on the basis suggested by the Archbishop of Canterbury in the report we published last week, viz., that the opinion of the Archbishop upon the two plans submitted to him be accepted without reference of that question to the executive committee; and therefore that the present contract for rebuilding the central tower be proceeded with at once. At a subsequent meeting of the Chapter on Monday it was decided that the architect should direct the contractor to proceed with the works according to the contract without further delay.

THE Council of the Salon rejected last year M. JULES GARNIER's picture of a Dance before ALEXANDER VI., and by doing so brought money to the painter. This year M. JULES GARNIER has, contrary to the usual practice, taken a subject from modern life, but no less sensational. The importance of a picture that will attract crowds was recognised, and *En flagrant délit* was accepted, after much discussion. But, through some higher influence, the picture will not be allowed to be hung, and it will have to be exhibited elsewhere. For political reasons a picture entitled *L'Apothéose*, representing a drunken Communist on a barricade with ROBERT MACAIRE and JACQUES BERTRAND as representatives of the allegorical figures, has also been sent adrift.

THE sculpture in the Lecture Room of the Academy comprises at least three works which as portraits merit attention from architects. The first is a marble bust of Mr. HORACE JONES, of which a plaster model was before exhibited. It is by Mr. C. B. BIRCH. Two medallions have been prepared by Mr. G. C. ADAMS. One is of the late Sir GILBERT SCOTT, and is intended for the Art Union of London. The other is of Mr. GEORGE GODWIN, and is a memorial for winners of his bursary at the Institute.

THE failure of Baron ALPHONSE ROTHSCHILD to win a seat at the Institute of France is not to be accepted as a want of urbanity in the majority. M. MEISSONIER, who inspired the opposition, was simply acting according to the spirit of French writers and artists. He is a friend of M. ROTHSCHILD, and esteems him, but he says that the banker has never been a patron of art in the ordinary sense of the word. M. ROTHSCHILD has expended colossal sums through agents in buying objects in auction-rooms and elsewhere, but there is no record that he ever gave a commission to an architect, a painter, or a sculptor for any work of importance. M. MEISSONIER happily holds a position that enables him to put his foot down and insist that a passion for acquiring *bric-à-brac* must not be confounded with a love of art. By so doing he has affirmed a truth which is more ignored in England than in France. When the painter said that he would renounce his pencil if the election went against him he was not carried away by vehemence, but by a sense of duty which can be appreciated in England, although few men here would have the courage to imitate him. It was not commissions for himself that M. MEISSONIER sought, but for architects and decorative artists. It may seem hard to say that Baron ROTHSCHILD would not be quite as good a member as the late occupier of the chair, M. DU SOMMERARD, or qualified to sit between Prince NAPOLEON and the director of the Théâtre Français. But men, whether great or humble, must be judged by their capabilities and opportunities, and by that test M. HEUZEY seems preferable. Better to have a scholar at the Institute who has been absorbed by figurines and Greek drapery during his life than the NIMROD of curiosity hunters. If Baron ROTHSCHILD, who has acted throughout in a way which has been faultless, will but interpret the voting rightly, he can easily turn defeat into a victory. The position which M. MEISSONIER suggested for him, that of being the MÆCENAS of French art, is even more exalted than a membership of the Institute.



## ARCHITECTURE AT THE ROYAL ACADEMY.

THIS year's exhibition of architectural drawings is likely to excite more than the customary discontent. It was expected that when one of the new rooms had been assigned to architecture alone, the additional wall space would allow of the hanging of so many drawings as to remove all cause of grumbling, unless among unreasonable people. There are more drawings than usual, for the numbers begin with 1,740 and end with 1,966, consequently over 220 drawings are to be seen, while there were only 140 last year. If they all represented contemporary architecture, the only objection that could be raised against the exhibition would be the smallness of the room. But when we analyse the numbers we discover that there is not much improvement in the arrangements, and the exhibition has a lesser claim than formerly to be considered representative.

In the first place, we have about fifty drawings or sketches of old work. We are as great admirers of antiquity as the Academicians who arranged the room, but until we find casts of Mediæval figures in the sculpture gallery and copies of works by early masters among the oil paintings, we shall maintain that it is contrary to the idea of an Academy to have the drawings which show the buildings designed by living architects supplanted by sketches of ruins. While architecture had no more than a share in a room, it might be inferred by the public that the absence of the works of so many architects was due to the limited space, but now it can be said that modern works are not worth exhibiting, and the Academicians are therefore compelled to fall back on the past. It will also be found that there are at least twenty designs which belong to industrial art rather than to architecture, and consequently a reduction of about one-third must be made from the number of drawings before the value of the concession can be estimated. To put the matter briefly, additional wall-space has been granted, but works which should be elsewhere are more than sufficient to fill it.

It must be said that the Academicians and Associates have not appropriated much of the space to their own designs. Mr. NORMAN SHAW and Mr. BODLEY do not exhibit; Mr. PEARSON has half a dozen drawings, which cannot be called large; Mr. AITCHISON has two small drawings; Mr. WATERHOUSE sends only one. An Academician painter has an outline drawing to show his proposal for the decoration of the dome of St. Paul's, but no one would object to the appearance in the gallery of any design by an artist like Mr. ARMITAGE, who has sacrificed much in order to convince people that wall decoration is practicable in England.

The collection begins with a Gothic church in Liverpool by Messrs. HADFIELD & SON, which is placed too high for study. Apparently the columns are of sandstone, and the interior has more warmth than is usual in cheap churches. Below it is the *Shakespeare Memorial Tower, Stratford-on-Avon*, by Mr. UNSWORTH, which forms the best part of an effective building. The arch over the roadway, the porch, steps, and tower combine to form a whole which may well be called picturesque. Mr. FLOCKHART has two drawings of a house and studio in St. John's Wood for his fellow-countryman, Mr. MACWHIRTER. They show one of those long, low buildings of which many examples are to be seen in the room. In this case we have good grouping. Messrs. HADFIELD'S *Business Premises, High Sheffield*, represents one of the few large blocks which have been lately carried out in Sheffield, although few towns have greater need of buildings of that class. *Beckley Church, Sussex*, by Mr. R. T. BLOMFIELD, is an interior showing a low chancel arch of large span. A finial from Clermont Ferrand gives a good notion of Mr. BLOMFIELD'S skill as a draughtsman. Mr. W. STIRLING'S *Design for a Library for a Small Town* deserves to be carried into execution. The materials are of stone and red brick. There is an arcade. Busts are introduced, and a figure of Wisdom; but nothing is seen which fritters away the effect or suggests a miniature of a large building. It is not often that such a recognition of scale is to be found in a building of the size. The *House and Observatory, Rusthall*, by Messrs. SALOMONS & WORNUM, is skied. The architects have attempted a difficult problem

in endeavouring to be picturesque while attending to the astronomer's requirements. In his *Study for the Centre Block of a Public Building*, Mr. PHENÉ SPIERS has a noble example of French Renaissance, which is unfortunately never likely to be produced in any other form in this country. It will bear comparison with the best pavilion of the Louvre. Sculpture has been utilised with judgment, but the line of swags over the lower storey detracts from the remainder of the work. The competition for a church at Whitby gave rise to disappointment; all the designs were, we believe, set aside, and Mr. JOHNSON, of Newcastle-on-Tyne, was asked to prepare one which is now in the Academy. The principal feature is the massive battlemented tower, but the whole design has a Northumbrian character. In Mr. BAKER KING'S *Church for Ceylon* no attempt has been made to introduce an eastern element; we have a simple English village church with a broach spire. A few years ago Mr. PURDON CLARKE, of the India Museum, made the experiment of slightly modifying the windows of an Indian church, in order that it might be more in keeping with the surroundings, and it might be well to show the pliancy of Gothic when English churches are erected in the east. There are three drawings of Mr. SEDDING'S *Proposed New Church in the Diocese of Ely*. A large fresco is seen in the chancel, and iron suspension rods are freely used in the construction of the roof. Messrs. BELCHER show their additions to *Stowell Park* by two geometrical drawings. Mr. E. G. HARDY has three clever sketches from Italy. Then we find two important designs which are placed too high. One is Mr. J. O. SCOTT'S *Reredos in Canterbury Cathedral*, and the general effect only can be observed. The detail, on which everything depends, is lost. Mr. COLLCUTT'S new premises in Oxford Street show a praiseworthy attempt to use arches for nearly all his window heads, and to suggest a sufficient support for the superstructure above the wide openings of the shop windows. Messrs. CHARLES SMITH & SON, of Reading, have a large mansion, *Arborfield, Bucks*, which is a good example of provincial work. Mr. T. G. JACKSON is fortunate in having five drawings of important buildings. The first is met with on this wall, *The Quadrangle, Trinity College, Oxford*, and the architect's aim is to be in keeping with the surroundings. We find one of Messrs. ERNEST GEORGE & PETO'S four drawings here: the whole will shortly be published in *The Architect*. Mr. E. J. MAY has two views of a house at *Wimbledon Common*, marked by his usual facile handling. The best compliment we can pay Mr. J. A. SLATER for his large view of the cathedral at Le Puy, is to say that at first sight it appears like a work by the late F. C. DESHON. Mr. VACHER has two small views of a house at Elstree, but they have been placed aloft in company with a view of the library at Gray's Inn, by Messrs. FLORENCE & ISAACS, which appears to be well adapted for its purpose. Why important works should be placed out of sight and students' sketches on the line are questions which we are unable to solve, but apparently much of the hanging was left to the discretion of the Academy porters. In the competition for the VICTOR EMANUEL Memorial, at Rome, Mr. DANIEL BRADÉ, of Kendal, attained much success by his proposed restoration of the Pons Sublicius. A large view appeared in the Academy a few years ago, and another is now seen, which, like the former, shows an appreciation of Roman work. Messrs. DOUGLAS & FORDHAM are represented by the *Institute and Baths, Tamworth*, which is a model of what a work of this kind should be in a small town. On this wall are two good sketches by Mr. REGINALD BARRATT.

The adjoining wall has been selected for the exhibition of four drawings by Mr. PEARSON, R.A. Two represent the St. Peter's Convalescent Home, at Woking, with a fine tower, which we hope may not be considered too costly for such a building; and in two others we have the central tower for Peterborough, about which so much has been spoken by rival authorities. The latter is worthy of Mr. PEARSON'S great reputation for towers, and it will be a loss, if, through expediency and a desire for conciliation, so stately a work has to be sacrificed. Mr. BLOMFIELD has a good drawing, showing his proposed restoration of the front of the south transept at Chester, in which abundant use has been made of statuary. But the most important of all the drawings, in this part of the room, is the coloured



view of the National Liberal Club, by Mr. WATERHOUSE. The originality of this building is unquestionable, but it is only when seen as here represented that an idea of its power can be formed, and when completed it will be sure to exercise an influence on street architecture. Mr. BASIL CHAMPNEYS' two views of the Indian Institute are not good as drawings, and the building would have looked better in perspective. The house, *No. 59 Jermyn Street*, by Mr. JOHN ROBINSON, is a well-considered example of Italian, which, by contrast, makes the style of some buildings near appear flimsy, and it is needless to say the drawing is excellent. In *The Martyn Hall, Cambridge*, by Mr. E. S. PRYOR, a good deal is made of the stairs, although the wooden enclosure underneath detracts from the great vigour of the remainder of the work. The *Design for a Town Gate-house*, by Mr. DAWBER, is executed in the style introduced by Mr. ERNEST GEORGE, that is, line with a light sepia wash. As a design it augurs well for the artist. Mr. LEE, in his *Gower's Walk Schools, Whitechapel*, makes use of brick pilasters effectively, and the building is in keeping with the old-fashioned work that is to be seen in the East End. Mr. SEDDING has a capital drawing of *St. Saviour's Church*, in which the vicarage is worked skilfully into the composition, and a large working drawing of a crozier. Mr. HERBERT GREEN in *Burnham Thorpe Church* suggests that the roof is the more important part. There is a large mansion by Mr. BRYDON, *Pickhurst, Surrey*, of which another view was seen last year. Messrs. CHRISTOPHER & WHITE's *West Hoathley Inn* is a vast improvement in buildings of that class, which unhappily are generally produced without any other thought than vulgar effect. Mr. MOUNTFORD's *Vicarage, Forest Hill*, is a small but pleasing building. Among the houses worth notice are Mr. RICARDO's *West Gates* and Mr. FERGUSON's *Carton Tower*. Mention should also be made of Messrs. GOLDIE & CHILD's *Roman Catholic Church*, and *Hatchett's Hotel* by Messrs. WEATHERBY & JONES.

On the largest wall prominence is given to Mr. PEARSON's views of *Westminster Hall* and the *Constitutional Club* by Mr. EDIS. The design by Mr. ASTON WEBB and Mr. INGRESS BELL for the proposed *War and Admiralty Office* has a central position on the west wall, and is the only one of the premiated designs which is to be seen in the exhibition. Are we to assume that, in the opinion of the Academicians, it was most deserving of selection? Messrs. LEEMING are represented by a design for the *Brisbane Town Hall*. On the western part of the north wall the most important drawings are Mr. ARMITAGE's design, the views of the *Military Hospital* by Sir ANDREW CLARKE and Mr. BELL, and the large drawing of Messrs. HADFIELD's *Corn Exchange Buildings at Sheffield*.

### THE GROSVENOR GALLERY.

WHETHER by accident or arrangement, there is generally one artist who is paramount in the exhibitions at the Grosvenor Gallery. This is Mr. WILLIAM RICHMOND's year. Mr. BURNE JONES is absent, Mr. WATTS appears weary, Mr. WHISTLER is demonstrating in Suffolk Street that black on black is not false painting, and Mr. WALTER CRANE seems to have puzzled himself with his allegories. We do not wish to detract from the merit of Mr. RICHMOND's largest work; but, while we are grateful to him for enriching the exhibition with one of the two pictures that are likely to be memorable, we must say that this year it is not very difficult to obtain the victory. It would be better for the artist's reputation if his painting had been placed in competition with works of a different class from those in the gallery.

The picture is called *An Audience in Athens during the Representation of the "Agamemnon."* The title will suggest that it is one of those paintings in which we see an effect and have to imagine the cause. They are dangerous experiments to undertake. The spectator is placed, as it were, in front of an audience of fifty or sixty people, who are nearly all gazing intently in one direction and are impressed by one influence. They are supposed either to be startled by the sudden cry of AGAMEMNON when his queen kills him, "like an ox in his stall," behind the scene, or to hear the

story of the murder as it is told by CLYTEMNESTRA to the chorus after the doors were suddenly opened and the murderess was seen standing by the side of the corpse. The emotions which are excited by the scene are different. The old choragus who is in the centre is as a host should be—master of himself; the men who are falling into the sere and yellow leaf, like AGAMEMNON, are revengeful in their sympathy; some women are scared, one galled jade appears to suffer remorse, and avoids the sight by hiding her face with her hands. With the exception of the slaves who wait on the choragus, and who are expected to be impassive, everyone is moved. The appearance of the spectators is a tribute to the tragedy and the poet's power. There is not one of those discordant notes such as some of the figures which GEROME has introduced in his *Phryne*, and which would be expressive of irreverence or weariness. The artist is not ambitious to introduce unnecessary contrasts; he shows the people made kin by the one touch of nature and no more. The majority of the men wear red robes—a colour which is trying when it has to be often repeated. Mr. RICHMOND has frankly accepted the difficulty, but has toned down the colours by occasional borders of figures. He has the authority of the great book on Greek textiles which the Russian Government produced for this treatment. It may be objected that there is less authority for the theatre. We see three tiers of stone seats, and, if completed, an enclosure of the size would probably contain a hundred spectators. We know that the Greek theatres were large, and we must imagine the one which is depicted to be a private theatre, surrounded by Ionic columns (through which we can catch a glimpse of the Acropolis), with sculpture along the base of the *Bouleutikon* and a saffron curtain over all. LYSICRATES may have had his rehearsals in such a building before he allowed his troupe to compete for the tripod. The picture has been well thought out and is carefully painted. Every one of the faces is marked by individuality, and so large an amount of character painting is rarely seen in any modern gallery, much less in the Grosvenor, where qualities of a different kind are in esteem. In addition to the large *Agamemnon*, Mr. RICHMOND has ten paintings, mostly portraits, and suggestive of his power to represent men, women, and children. The portrait of *The Hon. Lady Loyd Lindsay* is an able work of a lady in black, whose grey hairs appear to be encircled by a wreath on the tapestry behind; this is an arrangement that required judgment or there must have been a sacrifice of dignity. The two portraits of the Misses WORMALD are open to the objection that the subjects are posing, but the faces, dress, and background are in keeping. In the portrait of *Mr. Andrew Lang*, the artist, on the contrary, has avoided all trace of conventionalism—the writer looks as if he had been taken unawares when he turned from his cabinet of figures. The portrait is one of the most attractive in the gallery.

Next to Mr. RICHMOND's, the picture which has a claim on most attention is the nude figure of *Hypatia*, by Mr. C. W. MITCHELL. The subject is taken from one of those high-pressure scenes which the vehement CHARLES KINGSLEY poured forth when he wrote historical romances. The young Alexandrian, whose orthodoxy was doubtful, is at bay in the Christian church, and, standing against the altar, appeals from the men at whose hands she was about to meet her death to the figure of CHRIST that was above her. There is no questioning the power of the scene. This is no French nudity, but a martyr. We see the spirit of the heroine joined to a woman's weakness—the scorn which a teacher of philosophy must have had for the rabble who could hunt her down, and the despair which comes from helplessness when one has to contend with a multitude. The artist's name is strange to us, but the painter of a figure like this should have a great future before him.

Mr. WATTS's pictures must always command reverence. The painter would, however, be probably the first to acknowledge that the nude figure in *Love and Life* will not bear comparison with the *Hypatia* at the opposite end of the room. *Love and Life* may be said to be an idealisation of a pair like DAVID COPPERFIELD and his child-wife DORA, but it must be confessed that little is gained by the invention. The girl is feeble in body and face, and is led up fantastic rocks by a mawkish youth. There is no knowing whence they came and whither they are going, or the use



of such large wings, unless to aid the owner. The flesh tints are as remote from life as the subject. *Ararat* is a picture of a blue mountain-top in a deep blue sky, where a single star is shining. It has all the solemnity that befits the subject. Among Mr. WATTS's portraits we prefer *Miss Rachel Gurney*, a lady in black leaning against a golden background.

Mr. ALMA TADEMA is represented by two small but exquisite paintings and a portrait. In *Who is it?* we see a Roman lady looking over a marble screen, while *Expectations* shows a young girl seated on one of those carved marble seats which the artist admires, and gazing across the sea. The latter figure is most pleasing: there is a girlish simplicity about the face which is a change after so many imperial faces. The marble in both is rendered in a way of which Mr. ALMA TADEMA has the secret. There is a portrait of a doctor, or consulting physician, seated at a bedside feeling a patient's pulse, and eagerly looking towards some person who is unseen. The head is painted with smooth vigour, but whether owing to the novelty or the arrangement, it is not pleasant. Mr. ALMA TADEMA is fond of making a part stand for a whole, and here we have simply hands and a white sheet to suggest an invalid.

As usual, there is an abundance of portraits. Mr. MILLAIS sends a striking half-length portrait of Mr. GLADSTONE, who is shown wearing the red gown of a doctor of laws. It is hardly the Premier as he now appears, worn with toil and disappointment, and late hours, but rather as we might suppose him to be after a holiday a few years ago. The face seems more massive than the original, and as a likeness we prefer the portrait which Mr. MILLAIS exhibited in the Academy. But the colouring, although very thin in parts, has more precision than is usual with the painter. It is unfair to compare such a master's work with one by a young artist, but a student would do well after looking at the red robe to cross the gallery and contemplate the crude red and purple that are seen in Mr. BROWNING's portrait of his father. The contrast will be suggestive of an elementary truth in painting. A portrait of Miss MARGARET MILLAIS might be taken for a work that was painted several years ago, for it has qualities that Mr. MILLAIS rarely exercises now. Mr. HOLL has two portraits of similar size, which are placed almost close together—*The Late Lord Overstone* and *William T. Palmer, Esq.* It is not easy to see why there should be such a difference between them. Over the portrait of the old banker-lord is a plate of glass which, owing to the dark colour in parts, reflects the entire gallery, but in spite of the disadvantage it appears to be the better of the two. It has more depth, contrast, and character. Can it be that the artist was more satisfied with the subject of one picture than of the other? Mr. HERKOMER shows his customary vigour in the portrait of Mr. STANFORD, the composer. The flesh tints, however, suggest that the artist restricted himself to browns when preparing his palette. Mr. P. R. MORRIS in his *Miss Kate Sergeantson* represents a young lady who is apparently taking her first lessons in dancing. Mr. C. E. HALLÉ has among others a portrait of his father in a doctor's gown. He renders the calmness which is supposed to characterise the pianist; but any one who has observed Mr. CHARLES HALLÉ closely, either in St. James's Hall or in Manchester, would say that it is accompanied by more mental vigour than is to be found in the picture. We have always taken the placidity to be a recognition of the nature of the piano, and in our day no *maestro* has done so much justice to the instrument, no one has come nearer to the ideal pianist than Mr. CHARLES HALLÉ. In the picture quietness has become reverie. A much better work is *Pets*, a portrait of a boy with gold fish. Mr. JOHN COLLIER's *Lady Lorraine* is a vivid portrait; the dress is nearly white, and the lady carries a flat basket full of violets. Mrs. JOPLING's *Little Bo-peep* is also apparently a portrait of a child that was not kept in position without trouble. In Mr. STUART WORTLEY's *Miss Maud Waller* there is an air of defiance that is we suppose esteemed by the young lady's friends; face and dress have been well rendered, and the scheme of colour, a soft creamy yellow and deep crimson, is pleasing. Mr. HOLMAN HUNT's *Bride of Bethlehem* is a head of the lady who is seen in the artist's picture in Bond Street. It is needless to say that every detail of dress and trinkets is rendered with conscientious care, but the pink cheeks are

a departure from nature, and the picture requires a more distant point of view than is possible at present.

Historical subjects are supposed to be antiquated in the Grosvenor Gallery, and the figure-pieces are mainly of everyday life or of abstractions. Mr. STAPLES ventured to send a picture of CLEOPATRA engaged in toxicological experiments with slaves and adders, and the height at which the picture has been hung indicates his reward. The Egyptian queen is lying on a couch, and a powerful slave on whom the snake has operated is stretched before her. The subject is a good one, and deserved to be treated on a larger scale. Work of this kind—which is evidence of a study of the figure—is more worthy of recognition than many which may be said to depend for attraction on sentimental titles, and which are obtruded by their prominent positions on visitors to the gallery.

It is a relief to turn from those paintings to the out-of-door scenes which have been inspired by Mr. HOOK, R.A. Mr. BARTLETT's *Practising for the Swimming Match* is true to nature. The boys are boyish, while the boatmen have the weight and stolidity with which retired mariners are endowed. The colour is excellent, and although Mr. HOOK might have painted the figures, he would probably decline to introduce the yellow drawers, on the ground that it was an imitation of a foreign practice of contrasting colours. Mr. MACALLUM's *Lass that Loves a Sailor*, in which a party of humble folks are being rowed towards a brig, while one girl waves a handkerchief in anticipation, is an everyday scene, but bright and refined. The fleet of fishing-boats that is seen on the right fills an awkward space, and helps in giving the impression that the artist has not made too much of his incident. Another version of the subject—but far more commonplace—is given by Mr. PARTON in *It may be for Years, and it may be for Ever*. Green always looks best when it gives relief to one's eyes near the sea. Mr. DAVID MURRAY's *'Twixt Croft and Creel* on that account alone is sufficient to attract, for it shows a few fishermen mending their nets in a field. There are nets hanging to dry on the poles, and thrown into most graceful lines. In the treatment of this picture a lesson has been taken from French works. Foreign influence is likewise seen in Mr. CHRISTIE's *Time of War*, in which we have a woman in black holding a baby and standing on grass that is, if anything, over-verdant. No attempt is made to exaggerate her grief, and the limitation of the colour is in keeping with the scene. No less successful, although very different in the range of its colour, is Mr. WEGUELIN's *Egyptian Difficulty in the Time of Augustus*. The pashas are represented by a troupe of ibis, but no less convinced of the advantages of a policy of masterly inactivity. The girl who conducts the performance is vainly endeavouring to persuade one to fly through a hoop, while it is evident that an incentive of another kind is necessary, unless there is to be a retirement. The performance takes place in a Roman palace; but we must not expect to see marble and bronze in the background like Mr. ALMA TADEMA's.

The Grosvenor standard for acceptance is elastic enough, and we can generally find one picture at least which excites wonderment, just as the apple in the dumpling did with King GEORGE. Let any spectator look at *The Bridge of Sighs*, and the question must arise—How did it get in? We could point to others no less remarkable. They may be supposed to serve as foils for the works near them, but the blank wall space would be preferable for that purpose.

Among the landscapes there is no one work like the *Minister's Garden* of old, which will be a subject for talk throughout the season. Mr. KEELEY HALSWELLE has a good study of clouds, mist, and water in his view of *Kilchurn Castle*. But, contrary to the usual practice—for few scenes have been so often painted—we see very little of the expanse of Loch Awe, which makes the solitariness of the ruin more impressive. Signor G. COSTA has undertaken the difficult task of painting a wave on a shallow shore, and evidently from a southern sea. Waves of a different kind are to be seen in Mr. HOLLOWAY's *Harbour Bar*, in which the power that is latent is well suggested. Mr. HERKOMER's *First Warmth of Spring* is a splendid study of a mountain side, where the rocks may be said to lose their coldness, but the sheen of the stream has escaped from the canvas if it had been ever there. Two landscapes in the second room are so well contrasted that



they might be taken as companions. Mr. HELCKÉ's *Noontide's Heat and Hush and Shine* represents the landward view of a seaside village on a flat coast, the grass having that peculiar green which is seen nowhere else. Mr. BENSON also shows an expanse, but it is of a lagoon, on which one boat appears, while overhead are great masses of cumuli. Mr. JAY's *Valley of the Teme* is a charming landscape, all the more attractive owing to the scarcity of pictures of trees in the Gallery. Mr. BOUGHTON shows trees in his sketch called *Salmon Fishing in the Beaulieu River*, but we miss the delicacy of leaf and branch that belongs to northern plantations.

It must be owned that the Grosvenor Gallery does not uphold its reputation for presenting thoughtful works which might be in advance of the requirements of the Academy Council. To a certain class of people everything which is seen on the walls is supposed to be worthy of distinction, and to have an undefinable but most precious amount of originality, for in no other gallery is more of foolish praise to be heard in the course of a season. This year's exhibition may suggest that there can be fruitless seasons in Bond Street as well as in Piccadilly, and the knowledge, in spite of its unpleasantness, need not be without a good result. One thing is evident, that already there are indications of a necessity for reform in the gallery.

### THE ALBERT PALACE.

THE exhibition building in Dublin, which was designed by Mr. R. M. ORDISH, was a rather remarkable example of iron construction. Owing to the site being required for buildings for the Royal University, the iron girders and columns were sold to a company, and have been re-erected in Battersea on ground belonging to Her Majesty's Office of Works. It suggests the state of affairs in the profession when it is found that the whole of the work was executed without any consultation with the original designer.

The prudence of letting the site to a limited liability company has been doubted, for exhibition buildings are not always profitable ventures in this country, and it would be a strange sight to see the Whitehall officials compelled to take charge of a music-hall. But as Battersea Park is known to attract visitors, especially those belonging to the humbler classes, from many parts of London, it was a becoming act on the part of the First Commissioner to brave the risk of a loss to the Exchequer when there was a possibility of increasing the means of innocent recreation. Battersea is so readily approached by rail, river, and road that it becomes one of the most accessible places about the metropolis for a concert-hall and exhibition galleries.

The building is sufficiently spacious to form a promenade, the nave being nearly 500 feet in length, with a width of 80 feet and a height of 60 feet. As the upper part is constructed of glass and iron, there is abundance of light. The decoration has been executed under the direction of Dr. DRESSER, in the style which he can claim as his own. The glass of the roof has been painted yellow, with strips of blue at intervals. The cast-iron columns are of dark blue, with light blue on the chamfers. When the sun shines the light in passing through the yellow panes impinges on the columns, turns the blue into green, and produces a good effect. The girders are dark blue, with stencilled ornament in white on the webs. The walls are of a yellowish green, with a deep red in the arched recesses. Vermilion is used in the soffits of a part of the railing around the gallery. The scheme of colour is ingenious, and at present is agreeable, although there is the drawback of an empty building. In the concert-hall there is a somewhat different arrangement, and the style appears here to be too severe. The organ fills the whole of one end of the transept. The brown and black, in which the geometrical decoration has been worked out, give an Egyptian grimness to the instrument. The details are as logical as mathematical propositions, but in these degenerate days pleasure-seekers will not take delight in gazing on diagrams. The rigidity of the metal in the pipes has been emphasised by means of paint, and a tired Londoner will find that there has been no concession from the strictest theory to give him relaxation. The chorus-singers with such a background hardly seem to be simple amateurs of an unoffending nature. In

cases of this kind it is always well to ask, What would the French do; for, as they have devised more pleasures than other people, they should know how to decorate a concert-room. We may safely assume that in the hands of a Paris artist the Battersea organ-hall would be rendered more attractive, if less in accordance with the canons of OWEN JONES. The organ in the hall is a splendid instrument, and, when its power of sound is fully exerted, never seems to be harsh. That it should have been originally constructed for an amateur suggests the influence of organ music in this country.

The "Connaught Hall" is a vast dining-room parallel with the nave. Here use has been made of the Corinthian columns in white and black marble which at one time formed a part of Baron GRANT's big house at Kensington. The conservatories have been also purchased, and one of the peculiarities of the palace is the second-hand character of the materials. It is not possible under these conditions to produce anything which has a claim to be called architectural, and, so far as we can infer at present, the economy has not been attended with many advantages. A vamped building does not appeal to the pockets of investors, for it cannot fail to recall that fateful word "demolition," and to suggest that what has occurred once may again take place. It was a significant statement of the chairman, Sir ROBERT CARDEN, that he did not expect pecuniary profit. But if the building possessed that character which is only to be obtained by the means of an original design, we see no reason why it should not afford a more hopeful prospect, especially as the Office of Works is a considerate landlord. We do not believe in the success of undertakings which are inspired partly by philanthropy and partly by profit.

### TESSERÆ.

#### Restoring Towers.

SIR GILBERT SCOTT, R.A.

BE assured that no amount of shoring can be too much for safety, no foundations to your shoring too strong, and no principles of constructing it too well considered. (2) Use the hardest stone for your new work which you can procure, and spare no pains in bonding it and tying it together with copper. (3) Be very slow in your operations excepting at critical junctures, when the very contrary is necessary; be careful in your principle of movable supports; as you cut away old work set every stone in the very best cement, and run in the core with grout of the same material. (4) Key up well at the top, and leave your shoring a long time after the work is done, and then remove it with the greatest care. (5) (Though more properly first.) Tie your tower well together before you begin, and take special care of your foundations. Above all, have a thoroughly practical clerk of the works—neither too young nor too old. The shoring must be all of undivided timbers, and often of four or more such balks, bound and bolted together into one by irons.

#### Italian Painting.

SIR DAVID WILKIE, R.A.

To those who have seen art in its declension, it is interesting to observe the qualities which distinguish it in its infancy and its manhood. The works of Cimabue and Giotto, humble almost as the Chinese and Hindoos, had yet the living principle of expression and thought which, down to the time of Masaccio, furnished their only means of arresting the sympathies of man. The refinements of foreshortening, of contrast, and of intricate composition, with which the followers of the Caracci have so encumbered art, were to them impossible. In sentiment alone they excel. To this they appear to owe their advancement, and to this even the mighty men who brought art to maturity appear to owe their pre-eminence. The great works of Raphael and Michel Angelo in Rome (my chief study) evince this in a high degree. No artist can either be so high or so humble in his aim as not to be benefited by their contemplation. The divine Raphael, indeed, though shorn by time of his original freshness, all can understand, and all would wish to imitate. With Michel Angelo it is different; his works, incapable of being repaired or refreshed, present with their high reputation a great enigma to most people. Dulled with smoke and natural decay, the admired contour and relief, the great inspiring cause of grandeur and of deep thought, which Raphael imitated, and which drew forth the dying eulogism of Reynolds, is lost entirely to the common eye; and it is only by making allowance for these that the artist can see their great qualities, and, combined with them, what I least expected to see, a refined light, shadow, and colour.



**Greek Love of Form.**

PROFESSOR JEBB.

The Greeks were a physically beautiful race, with great quickness and fineness of perception, which made them feel at once when anything was exaggerated or absurd—or, as we say, in bad taste. One of their favourite maxims was, "Do nothing too much." They were naturally obedient in all things to a sense of fitness and measure—what they called "kairos," a word which means literally precision, the instinct of drawing the line, as it were, at the right place. So when they built a temple this instinct kept them from making one part of it too large in proportion to another, or from adding ornament in the wrong place. And this is the reason why such a building as the Parthenon at Athens, with its noble simplicity and symmetry, is so perfect of its kind. Or if a Greek made a statue, not only did he make the limbs and features on just the right scale for each other, but he refrained from trying to make the stone express more than it fitly could, or do duty for a picture. In the same way, when they wrote books the Greeks were guided by their sense of fitness. They felt that it was out of proportion, and therefore ugly, if the words were grander or rarer than the thoughts, and that a style which might be fitting in one kind of composition would be out of place in another.

**The Cathedrals of Leon and Beauvais.**

G. E. STREET, R.A.

When Leon Cathedral was planned, its architect must either have resolved that it should exceed all others in the slender airiness of its construction, or he must have been extremely incautious if not reckless. It is not a little curious that in France, at the same time, the same attempt was being made, and with the like result. The architect of Beauvais, unable to surpass the majestic combination of stable loftiness with beauty of form which characterised the rather earlier work at Amiens, tried instead to excel him alike in height and in lightness of construction. No one can pretend that he was an incompetent man, yet his work was so imprudently daring that it was impossible to avoid a catastrophe; and we now have it rebuilt, to some extent in the same design after its fall, but with so many additional points of support as very much to spoil its symmetry and beauty. Here, then, we have an exactly parallel case; for at Leon, no sooner was the church completed than it became necessary to build up the outer lights, both of the clerestory and triforium, to save the work from the same misfortune. Nor was the precaution altogether successful, for, owing almost entirely to the over hazardous nature of the whole construction, the south transept had recently, it is said, become so dangerously rent with cracks and settlements as to render it absolutely necessary to rebuild it; and the groining throughout the church shows signs of failure everywhere, and this of serious, if not of so fatal a character.

**Assyrian Colours.**

WILLIAM LINTON.

The colours which have revealed themselves during Layard's excavations at Nineveh display sufficient evidence that they are not inferior to those of the ancient Egyptians, either in number, variety, or brilliancy. Instead of the common earthy bole or reddle of the latter people, the Assyrians have left us a colour almost equal to vermilion itself. The monochrome pictures which represented the Chaldeans on the wall (Ezekiel xxiii. 14), are said by Gensenius, the Septuagint, and the Vulgate to have been painted with sinoper or rubrica, a native earthy oxide, like Indian red; whilst both the great English versions of the Bible now in use, as well as the rabbis, translate the word at issue ("shashar," Jeremiah xxii. 14) vermilion. At Khorsabad it appears that the red approached in hue to that brilliant colour, while the sculptures at Nimroud exhibited a bright crimson or lake tint. Layard thinks there is no doubt of their having made great use of vegetable colours, the materials for which are so plenteous in the vicinity of Nineveh. The rapid evanescence of some specimens of blue and red on plaster, which were bright and perfect in colour when first exposed, would appear to favour a vegetable origin, as no susceptibility of the kind is known to characterise any mineral reds or blues with which we are at present acquainted. Layard claims for the older Assyrian period the same colours which have been attributed to the early times of the Egyptians, viz., blue, red, yellow, black, and white. He also speaks of a green on the earlier monuments of Nimroud, and of green, purple, violet, brown, &c., enamelled in paintings of figures on bricks at the north-west palace. In allusion to the analysis of Sir Gardner Wilkinson's specimens of the Alexandrian blue, by Dr. Ure, Layard conjectures that the colouring principle may be the same, but affirms that the Assyrian blue is much brighter. He concludes that the colour was derived from copper, as he found an old mine of that ore in the neighbourhood of Nineveh. Layard considers the greens of Assyria to be similar to those of Egypt, which are in many instances

composed of iron ochre and copper blue. The yellows and blacks, also, he conceives to resemble those from Egypt; and as specimens of the latter class of pigments he mentions calcined bone and black iron ochre. The whites are of alabaster and gypsum. At Khorsabad, the French antiquarian, M. Botta, found green, red, black, white, yellow, and blue—the latter very lively in colour.

**Whewell as a Writer on Architecture.**

A. J. BERESFORD-HOPE.

At the time when Dr. Whewell came forward as an architectural writer, his previous studies enabled him to do so with peculiar usefulness. Up to that time architectural authorship, so far as it was not the occupation of the professional architect, was too much the mere amusement, often trifling or fantastic, of the amateur whose stock-in-trade was a repository, more or less restricted, of traditionary axioms of taste, unballasted either by sufficient archaeological research or sufficient knowledge of constructional requirements. Three books which appeared simultaneously, all of them by amateurs of a stamp different from the non-professional writers of earlier days, contributed a powerful impulsion to that wider philosophical analysis of universal architecture which is the note of our age. These were Thomas Hope's posthumous "History of Architecture," Professor Willis's work on the "Mediæval Architecture of Italy," and Dr. Whewell's volume on "German Churches." The fruit of the mathematical and mechanical training, which is the necessary discipline for high wranglership at Cambridge, was manifest in the powerful analysis which the last-named book contained of the hitherto imperfectly known science of vaulting, and other practical constructive questions. No other book on architecture, except a new and enlarged edition of this work, ever appeared from the pen of the Master of Trinity, but occasional papers showed that his love for architecture had not waxed faint.

**Nature and Pictures as Teachers.**

JOHN CONSTABLE, R.A.

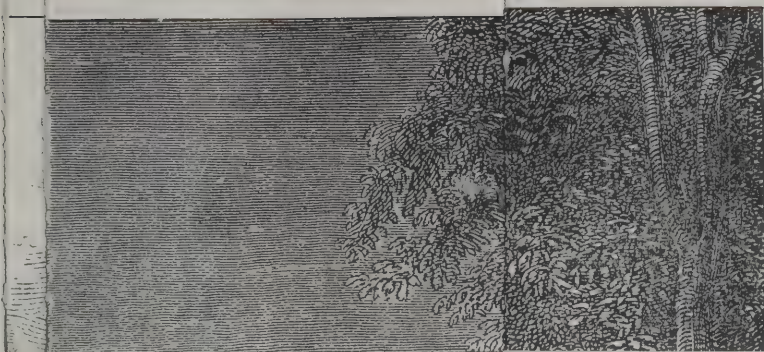
In art there are two modes by which men aim at distinction. In the one, by a careful application to what others have accomplished, the artist imitates their works or selects and combines their various beauties; in the other, he seeks excellence at its primitive source—nature. In the first, he forms a style upon the study of pictures, and produces either imitative or eclectic art; in the second, by a close observation of nature, he discovers qualities existing in her which have never been portrayed before, and thus forms a style which is original. The results of the one mode, as they repeat that with which the eye is already familiar, are soon recognised and estimated; while the advances of the artist in a new path must necessarily be slow, for few are able to judge of that which deviates from the usual course, or are qualified to appreciate original studies.

**French Joinery.**

J. W. HUGHES.

Joiners' work in Paris is defective in its construction and roughly finished. French joiners have apparently no idea of wedging up a piece of framing. In framing a room door with stiles 4 inches or 4½ inches wide, they would not carry their tenons through the stiles and wedge up the frame as would be done in this country, but their tenons would go only half way through the stiles and be fastened with pins. This system of pinning, which is a favourite one with the French, is considered very objectionable in this country, as the head of the pin never fails to project beyond the face of the work as it shrinks. In making sashes and other framing with narrow stiles in which the tenons are carried through the stiles, we saw no attempt to wedge, but everywhere we found even the best of their work disfigured by the unsightly pin. We met with no mortises more than 3 inches deep. In framing doors all their rails are made the same width as the stiles; wide middle and bottom rails are unknown. Large doors have frequently two narrow middle rails, placed from 6 inches to 9 inches apart. The consequence of such defective construction is that the doors in Paris almost invariably drop on the outside edge. This any one may observe who will take the trouble of looking along the edges of the rails of a pair of folding-doors in any part of Paris, when in 99 per cent. of them the doors will be found to have dropped from their proper position. In fact, we may say that, under their present system, it is impossible to construct a heavy door capable of bearing its own weight and retaining its proper shape, with its stiles and rails at right angles, unless braces be introduced to prevent it from racking. This defect seems to have occupied the attention of the French workmen, and at length, as far as sashes are concerned, it has been overcome. Some genius has discovered that what cannot be managed with wood only may be made easy with a combination of wood and iron; and now we find that the sashes of the New Opera House are strengthened and at the same time disfigured by iron squares screwed on the angles.







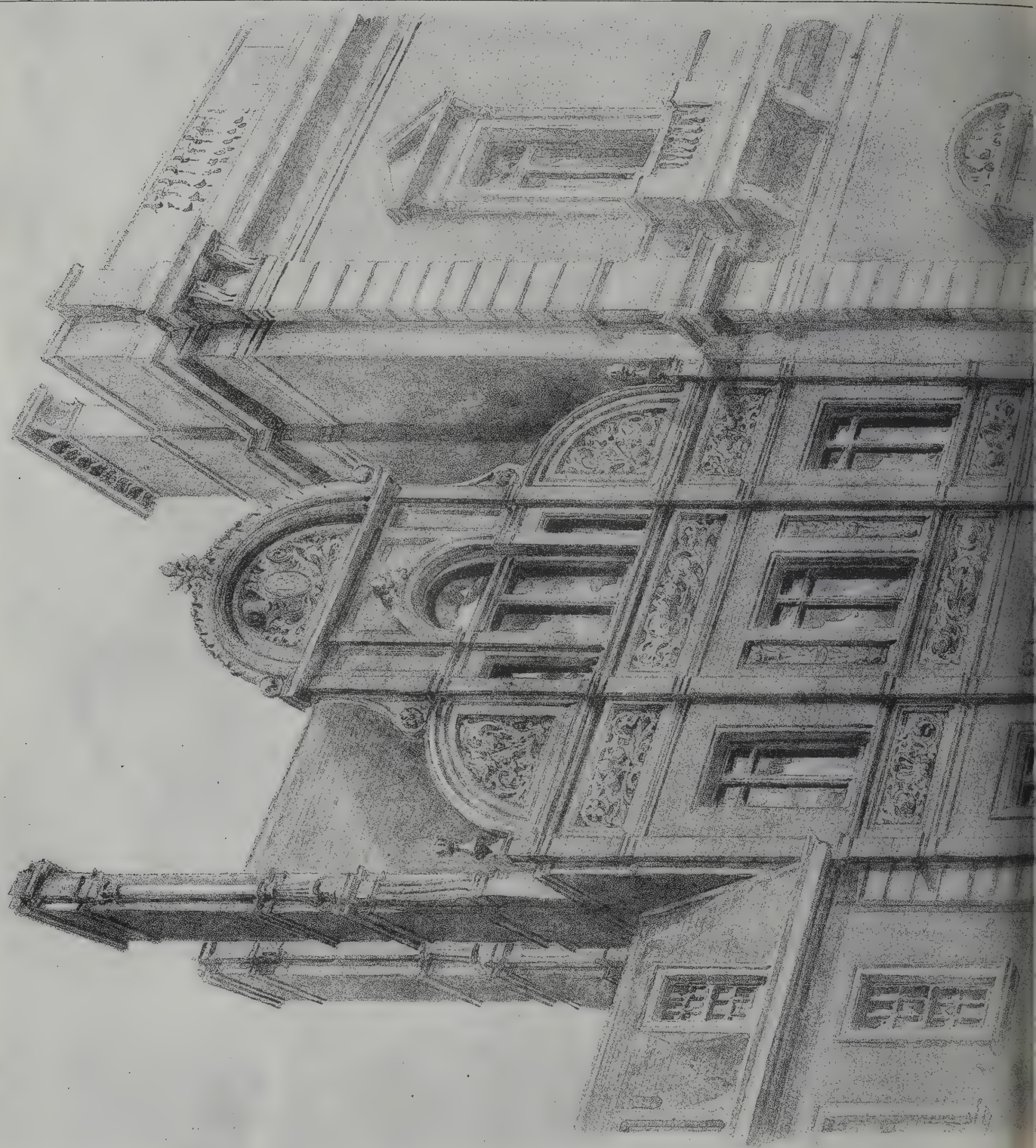


*The Fitch of Bacon*  
By Thomas Stothard R. S.













Nº 26 ST. JAMES' SQUARE, LONDON.

GEORGE AITCHISON, A.R.A. ARCHITECT.







## ILLUSTRATIONS.

NO. 26 ST. JAMES'S SQUARE.

THE building we illustrate is so nearly completed as to be in the house-agent's hands. The conditions of the problem were difficult. The site is narrow, and on one side is a large club-house. Mr. AITCHISON has, however, been able to produce a building which forms a marked feature in St. James's Square. The terra-cotta sculpture has an artistic effect which compensates for size, and contrasts well with the Mansfield stone in the lower part of the building. No better testimony could be found of the improvement which is taking place in London streets than is afforded by a comparison of the new house with those which adjoin it. If people who decry modern architecture would visit St. James's Square for the purpose, they might begin to doubt their own wisdom.

## THE FLITCH OF BACON.

THE illustration which is published in *The Architect* this week is larger than any plate that has hitherto been taken from STOTHARD'S picture of one of those subjects—partly real, partly imaginative—in which he was most successful as a painter. We need not occupy much space in describing the custom that is represented. The Dunmow prize is said to have been instituted by ROBERT FITZWALTER in 1244. The flitch of bacon was available for "whatever married couple will go to the priory, and, kneeling on two sharp-pointed stones, will swear that they have not quarrelled nor repented of their marriage within a year and a day after its celebration." Simple as the conditions may appear at first sight, they impose a test which few people are sufficiently happy to sustain. The flitch was not claimed, it is said, until 1445, when one RICHARD WRIGHT, a Norfolk man, was successful. Up to 1855 there are records of no more than six flitches having been distributed, or about one in a century. The scarcity of competitors is enough to make bachelors and foreigners rather sceptical about the happiness of married life in England, as in other places. If poets and painters were, however, restricted by realism, there would be an end to their art. STOTHARD, who knew little of family jars, painted a scene which might have occurred, and there was no necessity for him to inquire how often an order had been given to an Essex farmer to supply a flitch of bacon, or to speculate about the feelings of the young couple when they had arrived at forty years. The picture was a consequence of the marvellous success of the *Canterbury Pilgrims* as a subject for an engraving when exhibited. The following description of the work was written by Mrs. BRAY, the daughter-in-law of STOTHARD:—

I do not know at what period Stothard painted *The Flitch of Bacon*, which, from form and size and subject, becomes a companion to the *Pilgrims*. It was, however, a later work. The nature of the subject gives an air of festive triumph to every gay figure in the group. Before the young and amiable pair who have won the flitch is seen a serving-man bearing it along. By the side of his horse walk the country minstrels, who head the procession with harmony. Two lovely and sylph-like damsels run before the animal that bears the wedded couple, strewing flowers. After them follow the train of friends and attendants crowned with garlands, some mounted, others on foot. The picture is closed by a group of figures who stand as spectators. Amongst these the painter has introduced himself—the head is in profile, the likeness faithful. A beautiful young gentlewoman, who stands in the midst with a fan of feathers in her hand, is listening to some remark made to her by one of her own sex, whilst her head modestly inclines downward to avoid the admiring looks of two young cavaliers, each mounted, who close the procession, and who seem to be equally struck by her beauty. One of them is touching his hat to her with a fixed gaze of admiration, the other bows bareheaded, but appears to look upon her with more diffidence in his face. The painter by these figures, which form a little episode in the story of the flitch, seems to indicate that between the two young men a future rivalry is likely to spring up for so fair a prize. The landscape and every accompaniment of the painting is light, glowing, and exhilarating. From this circumstance I confess it is my favourite. I prefer it to the *Pilgrimage*. The dresses of the figures in this charming subject represent the picturesque costume of the time of Charles I.

## THE INSTITUTE REPORT.

THE annual report of the Council begins with an expression of regret at the retirement of the senior vice-president, Mr. David Brandon. Mr. Fraser, of Leeds, Mr. Honeyman, of Glasgow, and Mr. Paley, of Lancaster, have intimated their intention to make way for other non-metropolitan representatives. Mr. Blomfield has also resigned.

The number of members in 1884 was 1,276, which is four above the year before, and six above the year 1882.

During the year the Institute lost the following members by death, viz.:—W. P. Griffith, M. E. Hadfield (Sheffield), John Middleton (Cheltenham), Edwin Nash, R. M. Phipson (Norwich), J. H. Sanders (Derby), William Thompson, and John Whichcord, past President, among the Fellows; A. Bevan, H. Blackwell, F. Johnson (Bodmin), C. Marriner, W. Paice, and H. E. Tijou (Manchester), among the Associates; C. Henman (formerly a Fellow), H. A. Palmer, and Sir Erasmus Wilson, among the Honorary Associates. One foreign member, Professor Lepsius, of Berlin, who received the royal gold medal in 1869, is also deceased, and at a very advanced age.

A comparison of the income derived from subscriptions (exclusive of arrears) shows 3,145*l.* 16*s.* in 1884, as against 3,069*l.* 1*s.* in the previous year, and 3,059*l.* 12*s.* in 1882.

Examinations have been held in Manchester and London. Of the twenty-four gentlemen who presented themselves seventeen have received notice that they are qualified to become candidates for the Associateship; four have been relegated to their studies for one year, and two for two years, with permission to present themselves again for examination after the prescribed period without further payment and without submitting probationary work. The Council have also to report that, in the opinion of the Board of Examiners, the merits of the candidates generally were not such as to warrant the presentation of the Ashpitel prize, which has not been awarded for two years. The Council trust that the work of future candidates will be of a character sufficiently good to prevent a recurrence of these results.

The recommendation of the Institute that the Royal gold medal for the current year be awarded to Dr. Schliemann, has received the approval of the Queen. The Library Committee report:—

During the twelve months elapsed from April 1, 1884, to March 31 of the present year, the number of volumes presented to the library was 104 and to the loan collection twenty-six, exclusive of periodicals, reports and transactions of societies, and parts of works issued in a serial form. The works purchased comprise twenty volumes and four pamphlets for the library and ten volumes for the loan collection, together with several Parliamentary papers. The day attendances show an increase of 224, or more than 27 per cent., and the evening attendances an increase of 404, or 40 per cent., over those of the preceding twelve months. The number of fresh tickets (exclusive of renewals) issued for admission to the use of the library and loan collection was 70. The number of volumes issued on loan was 940, being an increase of more than 12 per cent. upon the number issued during the preceding twelve months. The extent to which members of the Architectural Association have availed themselves of the privileges of the library has recently been looked into, with the following results. The number of attendances for reading in the library was, from March 1 to December 31, 1880, 177; during 1881, 184; 1882, 371; 1883, 550; and 1884, 964. The number of loan collection issues was, from March 1 to December 31, 1881, 93; during 1882, 264; 1883, 417; and 1884, 465. Among donations to the library, special mention is made of the coloured copy of the great work, collated, under the auspices of Napoleon, by the Institut de France, as a memorial of the expedition to Egypt at the end of last century. For this the Institute is indebted to Mr. James Ferguson.

After recording the prizes which have been awarded, the Council express regret that only one essay was submitted, and that it was not of sufficient merit to warrant their recommending it for the prize. The same subject, "Pediments and Gables," has been set for next year, and the sum of twenty-five instead of ten guineas is offered as a premium to accompany the Institute medal for essays, in 1885-86. They have further to report that neither in this nor in the preceding year have any designs been received in competition for the Grissell gold medal for construction, and they are compelled to believe that the principal reason for this marked abstention is the unwillingness or inability of architect-students to touch the important subject of iron construction—a subject which was set in 1883, repeated in 1884, and is again set for the current year, with the addition of a premium of ten guineas to be given with the medal.

The list of medals, studentships, and other prizes for the current year is one of increased and unusual importance, and includes the new Owen Jones studentship, to be held under conditions for two years, for the study of architecture, more



especially in regard to ornament and coloured decoration, and a special studentship to be held in 1886 for the encouragement of the study of Classic architecture and of classical Renaissance architecture in the kingdom of Italy.

The Competitions Committee have made considerable progress in their work. During the year a circular-letter, setting forth the objects and aims of the architects who have signed the undertaking, has been sent to all the mayors and other public functionaries throughout the United Kingdom, and to the editors of the leading metropolitan journals. At the present time the number of adhesions from architects exceeds 1,400. From March 1884 to the present date the committee have been in correspondence with the promoters of forty-six competitions, and have been mainly instrumental in procuring the appointment of assessors in fourteen cases. The greatest drawback to success lies in the fact that a large number of architects will still compete, no matter what the conditions are, so that promoters can easily procure architects to send in designs, without the condition of an assessor being appointed.

In respect to the charter, the Council have carefully considered a memorial presented in November by more than 450 Associates, as well as representations received from non-metropolitan members; and, having availed themselves of the services of a solicitor who has had large experience in advising on such matters, they are now in a position to consult with the Associates' Memorial Committee, and with delegates from non-metropolitan societies. The Council therefore hope to be able shortly to lay the result of their inquiries before a special general meeting of the Institute, for the consideration of the general body of members.

The Professional Practice Committee have held four meetings, at which subjects of much importance have been considered and dealt with. An application to be admitted into the class of Fellows which was received from an officer of the Royal Engineers has been carefully considered by the Council, but it was found that no power existed under the charter to admit as professional members such military officers, who, so long as they remain in the service, and whatever their particular employment may be, are eligible only for admission to the class of Honorary Associates.

The resignation of some non-metropolitan members having occurred at the close of 1884, on the sole plea that they are resident at too great a distance from London to attend the Institute meetings, the Council venture to urge that the corporate body of British Architects exists for a higher purpose than that of a general meeting or for the maintenance even of a library. It exists for the advancement of architecture as a profession, as well as an art and a science; and in this country, where the State remains neutral, academies, institutes, and such learned societies depend entirely upon the support and co-operation of individuals—a matter, the Council think, of as much importance to architects throughout the country as to those of London.

## THE LATE MR. ROBERT ANDERSON, A.R.S.A.

WE deeply regret, says the *Scotsman*, to announce the death of Mr. Robert Anderson, A.R.S.A., who has for many years occupied an eminent position as an engraver, etcher, and water-colourist, and who also of late has been an exhibitor in oil in the Royal Scottish Academy. He died on Friday morning in last-week at his residence, 16 East Claremont Street, Edinburgh, at the early age of forty-three. He had been in failing health for some time past, and during the last three years the chest complaint—contracted, it is understood, through exposure out of doors in the early portion of his career as a painter—from which he suffered rendered it necessary for him to spend the winter months abroad. By profession an engraver, Mr. Anderson early displayed his acquirements and ability in that department of art, and for several years nearly all the principal Royal Association figure pictures were engraved by him. His last large engraving was that of Mr. Herdman's picture of Prince Charlie taking refuge in the house of one of his devoted adherents. Adding water-colour painting to his studies, the deceased gentleman during the last dozen years produced many works in this branch of art which found a place on the walls of the Royal Scottish Academy. His well-known water-colour of the last great review in Edinburgh was etched by R. W. Macbeth, A.R.A.; and his etchings of his own drawings were always readily picked up. His first oil painting to the Royal Scottish Academy appeared last year in the exhibition—a sea piece which challenged general attention. It was followed this year by a larger and more important picture, which justified his adoption of oil painting, and which is really a powerful sea piece, representing the aspect of Wick harbour in an easterly gale. He had contributed to the Academy every year since 1873, when he began to exhibit in water-colours. Ten years later (in 1883) his works included *Gipsy Peasants*; *The Evening Tide*; *Entrance Gate to San Paolo*, *Seville*; and *The Missing Boats*. Mr. Anderson was a

native of Edinburgh. Of a genial and kindly bearing and disposition, he was greatly esteemed by all who had the pleasure of his acquaintance; and every one regarded his election as an associate of the Royal Scottish Academy a just and well-merited recognition of his worth, acquirements, and ability. Mr. Anderson is survived by a widow and a family of five.

## THE ROYAL HIBERNIAN ACADEMY.

ON Saturday there was a meeting in Dublin. The prizes obtained by the students of the Royal Hibernian Academy were handed to them by the President. The following were the successful students:—

Drawing from the living model (silver medals)—R. T. Moynan and C. E. Lodge. Bronze medal—J. O'Reilly.

Drawing from the antique—R. T. Moynan.

For the best drawing from life—1st, C. E. Lodge; 2nd, J. O'Reilly.

For the best drawing from the antique—1st, C. E. Lodge; 2nd, J. O'Reilly.

Special prize, offered by Mr. John O'Connor, A.R.H.A., for the best set of drawings from life—H. Tisdall.

Sir Thomas Jones then delivered an address, of which the first part was a repetition of what was spoken in Liverpool in December. In conclusion, the President said:—I have now given you the substance of my address to the Liverpool students, and, in conclusion, permit me to add a few words to the medallists and other students of this academy. It has now become usual for those who win the highest honours we can give to complete their studies in the Royal Academy of Antwerp, or in some Paris *atelier*, and I strongly recommend this practice to all who can afford to continue their course of study under more favourable auspices than can be obtained here. I allude more particularly to the facilities afforded the student to acquire the "mécanique" of painting. Drawing can be learned here as well as on the Continent. We have the same casts from the antique, and as good, if not better, living models; but, unfortunately, none of our resident artists can afford to give their time gratuitously to the painting classes, and the funds of this academy will not permit us to adequately remunerate our visitors. With the limited means at our disposal we are making an effort to establish an efficient painting class, and, I am happy to say, we are ably seconded by the exertions of Mr. S. Catterson Smith, who gives the students as much time as he can afford from the imperative claims of his profession. But another great advantage to be derived from study in foreign schools is the severe training which is imposed on the students, and the discipline to which they must submit or leave the school. I am happy to say that the majority of those who have left us for the purpose of foreign study cheerfully adapt themselves to what to them must appear restraint, the result being very apparent in the works they send up from time to time; and you are all aware of what honour to themselves and credit to our academy has been gained by Messrs. Osborne, Moynan, Tisdall, Kavanagh, and Hill, one of the number, Mr. Moynan, having carried off the first place against competitors of all nationalities in the "concours" at the Antwerp Academy. I trust he will not rest satisfied with his laurels, but that he and others who have gained distinction will continue their studies with the earnestness which has marked their commencement. You are all ambitious to become successful artists, but you must count well the cost, and bear in mind that your chances of success, as long as you remain here, are poor indeed; for as a people we have little taste for art, and little encouragement for its professors. If you can be content with local reputation, and satisfied with the paltry reward you can at best secure, you may give up further study, indulge in relaxed discipline, and paint for an apathetic public. But if you have higher aspirations, if you wish your name to "echo through the corridor of Fame," and your talent to be recognised wherever the English language is spoken or understood, bend all your energies to arm yourself for the great artistic arena—the capital of the British empire—and win your spurs in the lists of the Royal Academy, or in some of those London galleries where to have a work upon the walls is a diploma in itself. I know I am laying myself open to the accusation that in this recommendation I give most unpatriotic advice, but it is sound, nevertheless; and you will see that it is so when you recall the names of those Irish artists which are inscribed upon the "libro d'oro" of artistic reputation. Do you imagine that Barry, Mulready, Danby, Sir Martin Shee, Maclise, Elmore, Foley, Macdowell, Hayes, and the Irish director of the London National Gallery would have made their names as familiar as household words by remaining here? No. Artists of possibly as great ability as those who transferred their talents to London have from one cause or other, often from social ties, elected to remain here, and their names are now forgotten. The city that knew them knows them no more, and the picture-dealer looks at you with the expression of one who listens to a language he does not



understand if perchance you allude to them or their works. And the worst of it is that every year Irish art, even in London, fails more and more to make its mark from that lack of energy and want of perseverance which too often characterises our countrymen, and the possession of which has mainly contributed to the marvellous success of the Scotch artists. When you bear in mind that among the foundation members of the Royal Academy, Ireland was represented by an ancestor of our Academician, Mr. Hone, and since then, of the Irish artists I mentioned just now, who were members of the Academy, one became President and another, Maclise, might have worn the red gown had he cared for the honour—when we remember this and contrast it with the present it makes one's cheek burn with shame, to think that not only is the Royal Academy at the present time without an Irish member, but among the artists who are likely to be candidates there is not one Irishman. I trust some young artist who heard me this evening will register a vow to regain that position once held by his countrymen; and I trust that some here present may live to see an Irish picture once more upon the line in the Royal Academy, and an Irish name again appear in the ranks of the members and Associates of that exclusive body. After a well-fought fight against systematic discouragement, the Scotch artists have fairly won this recognition, and it is not improbable that ere long the majority of the members of the Royal Academy will hail from beyond the Tweed. Then why should Irishmen of the present day drop out of the contest disheartened? The field of fame is open, but remember the knight must be armed at all points for the encounter. That some young champion may come forth to bear aloft the banner of his nationality is the ardent and long-cherished desire of one who, though himself retired from the combat, still watches the struggle with a patient eye.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### M. GUIZOT ON THE ROYAL ACADEMY.

THE annual banquets of the Royal Academy have given opportunity to many of the famous men of the century to express their opinion on art. It may not be known by all our readers that among the orators was M. Guizot. In 1839, when Marshal Soult was made President of the Council, M. Guizot accepted the appointment of ambassador to England. His mission was, however, of short duration, for in the whirligig of politics Thiers again became Prime Minister, and Guizot declined to serve under his rival. The following is a translation of the speech which Guizot delivered at the Academy banquet on May 2, 1840. Sir Martin Shee was president at the time:—

Mr. President, Gentlemen,—The diplomatic body is deeply touched by your noble and kind hospitality, and I am happy to have at this moment the honour of being the organ of its sentiments of gratitude and sympathy. Nowhere, in truth, are they more natural, or better placed, than on this spot and at this solemnity. Many ages ago, when the Emperor Vespasian conceived the design of assembling in one place all the *chefs-d'œuvre* of the arts which conquest had brought together in Rome, he chose the Temple of Peace. He wished that all the peoples, forgetting their ancient enmities, might enjoy together this fine spectacle. Nothing agrees better than peace and the arts. There is between them a natural and powerful harmony. Whoever may doubt it has only to cast his eyes on what has passed in Europe during the last twenty-five years. It cannot be said that these years have been for the arts an epoch of grand and original creation, nor that they have produced many of those new *chefs-d'œuvre* which render an age illustrious among ages. Yet the intelligence and taste for the arts have been spreading, have penetrated into places, among men who hitherto had been strangers to them. In traversing Germany, France, and also, without doubt, England, we see rising everywhere, in the provinces as well as in the capitals, a crowd of monuments, great or small, ambitious or modest. The statues of the great men come to people the public resorts. If any exhibition analogous to the present is anywhere opened, the crowd runs to it. Painting, sculpture, music, all the arts, enter into peoples' tastes, into their manners, and become almost popular. This is a great blessing, gentlemen, at our epoch, and in the state of modern society. What would you do, what should we do, in all our countries, with all these men—these millions of men—who are incessantly rising to civilisation, to influence, to liberty, if they were exclusively given up to the thirst of material prosperity and to political passions? if they dreamed but of en-

riching themselves, or of contending about their privileges with their fellows? They need other interests, other sentiments, other pleasures. Not to turn them from the amelioration of their condition and from the progress of their liberties; not that they should be less exigent (*exigeans*) and less proud in social life; but, on the contrary, to render them capable and worthy of their more elevated condition—capable and worthy to carry higher in their turn that civilisation towards which they mount in crowds. And, also, to satisfy in them those *penchants*, those instincts of our nature, which are satisfied neither by material prosperity, nor even by the works and spectacles of political liberty. Like literature and the sciences, the arts possess this virtue: they open to the activity and enjoyment of men a fair and wide field; they spread pleasures which are brilliant and pacific; they at the same time animate and calm men's minds; they soften our manners without enervating them; they bring together and unite, in one common enjoyment, men who are otherwise very different in situation, in habits, in opinions, in desires. It is not, therefore, for yourselves alone, gentlemen, for your own pleasure only, that you cultivate and encourage the arts. The Royal Academy, its institution, its exhibitions, have a greater aim, a merit truly social. We congratulate ourselves on being associated to-day in its solemnities. We sympathise in its labours and its hopes. In such a meeting, in presence of these *chefs-d'œuvre*, under the influence of the sentiments which they inspire in us, we are your guests, gentlemen; but there are no strangers here.

### COMMEMORATION OF SIR JOSHUA REYNOLDS.

The Academy dinner recalls another feast, one that was held in May 1813. It was given by the directors of the British Institution in honour of Sir Joshua Reynolds. The following is a contemporary account which was considered worthy of preservation by Sir Martin Shee, P.R.A.:—

The fête of Saturday last was a proud day for the arts of England, for it presented an assemblage of pictures, all by the hand of one English master such as no country upon earth could rival; and the rooms of the British Institution, though adorned by about one hundred and thirty of Sir Joshua Reynolds's performances, do not contain more than a specimen of his labours, as perhaps not fewer than three thousand pictures in all have issued from his easel. A gentleman in the rooms told us he actually possessed near seven hundred different engravings from his works, and it is obvious that few of his many family pictures were ever engraved. The managers of the British Institution, in resolving upon this affectionate tribute to the memory of Sir Joshua, have taken the most efficacious course for the ultimate promotion of their first object, that of forwarding the progress of the English school by spreading over the public mind a correct taste for the fine arts, and by warming youthful genius into enthusiasm by the honours thus paid to departed excellence. Prizes and premiums may do much with some tempers, but they have too much affinity with commercial feeling to stimulate the ardour of genuine ambition. We are sure that the student who shall behold this unrivalled collection, and listen to the public sentiment which it excites, will not merely be proud of belonging to the Academy of which he was the president, but will feel the glowing spirit of emulation stir him to the pursuit of rival glory. It is indeed a most animating spectacle, and must be as favourable in its consequences as it is gratifying in itself. The variety of the subjects—the poetical character which breathes in every production, and which advances each individual portrait to the rank of a history, the grandeur chastened by the simplicity of the compositions, the felicity of adaptation both of colouring and of accessories to the chief object—everything contributed to impress on the company who partook of this festival the most delicious and unmixed delight, both as patriots zealous for the honour of the country and as amateurs fervent in the promotion of the art.

The managers determined to open the exhibition by a meeting to commemorate the artist. For this purpose it was resolved to make a temporary communication from the house of the institution to Willis's great hall, in King Street, for the dinner, and to keep the exhibition rooms unencumbered to serve as drawing-rooms for the company. His Royal Highness the Prince Regent honoured the meeting with his presence; he continued an hour in the exhibition before dinner, and entered the room about half-past six. He was placed in a chair of state, and the Marquis of Stafford, at his right hand, discharged the duties of chairman for the day.

There were also present:—

Marquis Camden, Earls of Liverpool, Harrowby, Bathurst, Mulgrave, Aberdeen (president of the Antiquarian Society), Ashburnham, Grosvenor, Grey, Cowper, Hardwicke, Egremont, Harcourt, Upper Ossory; Lords Castlereagh, Amherst, Brownlow, Borringdon, Dundas, De Dunstanville, Falmouth, Harewood, Crewe; the Right Hon. the Speaker, C. B. Bathurst,



Charles Long, Sir W. Scott; Sirs G. Beaumont, T. Bernard, Abraham Hume; Generals Phipps, Hammond, Turner; Messrs. Angerstein, Davis, Duncombe, Hope, Knight, W. Smith, Sheridan, Whitbread, the President and Royal Academicians; in all, about one hundred and forty persons.

The dinner was conducted rather in the manner of that of a private table than of a tavern. There were no professional singers, and the toasts were not accompanied with the usual demonstrations of applause. The noble President introduced the toast to the memory of the great master, whose works and whose virtues they were this day assembled to commemorate, with a graceful tribute to his high merits. His Royal Highness and all the company stood up, and received the toast with that sentiment of reverence and affection for the memory of Sir Joshua Reynolds which every lover of the fine arts must feel.

Mr. West, on his health being drank, coupled with that of the Royal Academy, over which he so worthily presides, returned thanks in a short speech, in which he expressed his gratitude for the signal mark of favour shown on this day to the memory of the eminent person whose powerful genius had, under the fostering auspices of the illustrious family on the throne, raised the English school to its present celebrity. Every member of the Academy felt the high honour done to this body in the tribute paid to their former president.

The Earl of Aberdeen also, as president of the Antiquarian Society, made a short and elegant address of thanks when that society was given as a toast. He said that it ought ever to be remembered that, in the first revolution of the fine arts from the barbarism of the Middle Age, the revival of a correct taste was founded on a reference to, and study of, the admirable fragments of the sculpture of ancient Greece and Rome which have been happily preserved to us, and which the great master whose memory they were that day assembled to commemorate had constantly made his models, from the quick judgment with which he perceived that the purity and excellence of his art depended on simplicity, nature, and truth.

His Royal Highness rose at half-past nine, and was conducted back to the exhibition rooms by the noble chairman. The company stopped to drink the health of the Prince Regent again with the honours, and followed him to the rooms, which were finely illuminated, and a splendid appearance of ladies heightened the *coup d'œil* of the spectacle. Many more persons of the highest distinction, among whom were several of our prelates, had also come to the gallery in the evening, and the promenade continued till a late hour at night, when the company departed with the highest sense of the propriety and taste with which the entertainment had been conducted.

### ROMAN EXCAVATIONS.

ARCHÆOLOGICAL discoveries of importance are rapidly succeeding each other in Rome. That within the limits of the Temple of Vesta illustrating the rites performed there has been followed by another, made within the distance of a few yards, connected with the Christian Church and the ecclesiastical history of the tenth century (*circa*). It will be remembered, says the *Times* correspondent, that immediately behind the remains of the Temple of Castor and Pollux, and adjoining the Church of Santa Maria Liberatrice, there stand the colossal walls of an edifice of brickwork of the finest Imperial construction. What it was no one ventured to pronounce. The late Mr. J. H. Parker maintained that one of the walls belonging to it was part of the celebrated bridge built by Commodus across the Forum, from his *domus* on the Palatine to the Temple of Jupiter Capitolinus. Others have thought that these walls might be the remains of the temple dedicated to Augustus, which was somewhere in this vicinity. But these theories must be dismissed, together with others propounded in times past. Within and against the walls of this mysterious relic of Imperial magnificence a number of hay-lofts had been built, hiding them almost entirely, except where they towered above the modern roofs. These hay-lofts, the ground floors of which were occupied by wheelwrights and carpenters, are now in process of being demolished. Already the area of one great hall, with large niches for statues in it, and far exceeding in dimensions and grandeur any of the remains of the Forum adjoining it or of the Palace of the Cæsars above it, has been cleared. It was soon seen that the flooring almost corresponding with the modern level was of recent date. It was cut through. The original flooring was found at a depth corresponding with the level of the Forum itself. One-half of this hall has been further cleared down to that level, and from it opens a passage the walls and ceiling of which are covered with comparatively uninjured fresco paintings representing Christian saints standing in rows on one side and the other, while on the face of the wall of the hall itself are remains of similar frescoes, indicating that it had been completely decorated in the same manner.

The Commendatore de Rossi attributes these frescoes to the tenth or eleventh century, but for the present reserves any further opinion beyond that which he put forth in a tentative manner, with references in part proof of it, in a paper written by him on the eight hundred Anglo-Saxon coins discovered in a jar two years ago close to the House of the Vestals. This opinion was to the effect that at the time those coins were sent to Rome the Imperial buildings along that side of the Palatine were occupied by the pontiffs as their residence, and by the officers of the ecclesiastical Government, as the Vatican is now. We must wait for the completion of Signor de Rossi's studies and researches regarding this interesting subject. But in the meantime one may be tempted to suppose that we see in this wall of an unknown edifice of one of the first Cæsars the hall, perchance, of the Consistory of the time of Alfred the Great, whose money was found near it. The completion of the excavations will, it is hoped, throw full light on the original nature of this grand edifice of pagan Rome and the later use to which it was applied in Christian days.

### BIRMINGHAM ARCHITECTURAL ASSOCIATION.

A PAPER was read at last week's meeting by Mr. A. Reading on "A Comparison between English and Continental Renaissance Architecture." The lecturer, with the aid of a powerful lantern, illustrated his remarks by views of some of the most important Renaissance buildings abroad and at home, and pointed out the successive waves of Renaissance expression, which differed very materially, according to the country in which it was practised. The lecturer urged all admirers of this style to study the Early Italian Renaissance, as it was only to be found in that country in its simplicity and purity; and further strongly advocated, where the style was adopted in this country, the advisability of following in the steps of the Italians and drawing from the pure Classic of ancient Greece and Rome, adapting their forms to modern requirements, and thus in time forming a pure Renaissance of our own. A hearty vote of thanks, proposed by Mr. H. H. McConnal, and supported by Mr. Victor Scruton (honorary secretary) and the vice-president, was unanimously accorded to Mr. Reading for his interesting paper.

### TREATMENT OF ARCHITECTS IN AMERICA.

THE following paragraphs from the *American Architect* show the difficulties with which the architects of the United States have to deal when they have public bodies for patrons:—

Most of our readers know something of the unfortunate result of the competition for the Boston Public Library, in which, after offering very liberal prizes, the city failed to obtain a plan suitable for its purposes—not through any fault of the architects, but simply, to put in a few words the general conviction on the subject, because the terms of competition were drawn up without suitable advice. Since the award, therefore, which condemned the taxpayers of the city to pay ten thousand dollars for a few sheets of drawings embodying designs which their authors were compelled by their instructions to make impracticable and injudicious, there has been a good deal of curiosity, among the public quite as much as in the profession, to see what new steps would be taken for procuring proper plans for the building, which must be begun within a few months, under penalty of the forfeiture of the land granted by the State to the city as a site for it. The first of these steps, according to the Boston papers, has just been taken, in the shape of an order, passed by the municipal government, instructing the city architect—a young man who devotes his time to the city building work—to prepare plans for the library building, and submit them to the trustees of the library for approval. With all respect to the city architect, we cannot help thinking that the people of Boston would much prefer to have their costly library erected under the direction of some individual of greater distinction in the profession; and, although the terms of the ordinance do not prevent the library trustees from employing expert advice in considering whatever plans may be presented to them, it would, we are sure, be more satisfactory to them, as well as to the taxpayers, to have it distinctly understood that no plan would be approved or adopted without professional criticism. We take it that the citizens desire to have the best, most convenient, and beautiful building that their money will procure, and are not only willing, but anxious, to secure this by the only possible mode—that of employing the best architect who can be had to design it; and we imagine, moreover, that they think they have thrown away enough money in trying to dodge this conclusion, and would



be glad to see an end of amateur tinkering with the most important building project that the city has undertaken for many years.

The pressure for the removal of the present architect of the Capitol, Mr. Edward Clark, and the substitution of some politician, still continues, although no reason whatever has yet been given for displacing a man admirably qualified for his duties, who has been professionally connected with the Capitol for 34 years, and knows nearly every stone in it, to make a place for some dilapidated party hack. For persons unfamiliar with Washington a little reflection is necessary to understand the importance of such an office as that which Mr. Clark now fills. Perhaps no public building in the world is harder "worked," to use an expressive phrase; and alterations, refittings, and repairs are continually going on. To carry these out satisfactorily and economically, or to devise modes of satisfying new wants, such as every year develops, a thorough acquaintance with the fabric is absolutely necessary, and the tinkering of a novice might easily result in irremediable mischief. Unlike many of our public buildings, the Washington Capitol, partly through the skill of Mr. Clark himself, who acted as assistant to the architects of the wings which form the most important portion, is a work of art which may safely challenge comparison with any architectural object in the world, and it would be a misfortune to the whole country to have that discretion which has saved the pure and noble beauty of our principal building from so many dangers exchanged for the guardianship of a man who, however devoted and skilful he might be, must inevitably lack the special tastes and training which have so admirably fitted Mr. Clark for his position.

### ELECTION OF A DISTRICT SURVEYOR.

AT the meeting of the Metropolitan Board of Works on April 24 there was an election of a surveyor for the district of East Kensington. The number of candidates was first reduced to six by a show of hands; the names were then put to the vote *seriatim*, and the name of the candidate having the least number of votes was struck off at such voting. According to the *Metropolitan*, the following were the candidates for the appointment, the number following each name denoting the votes recorded for each at the first voting:—Mr. A. Ashbridge, 26; Mr. T. Batterbury, 15; Mr. H. H. Bridgman, 12; Mr. C. W. Brooks, 11; Mr. H. Cheston, 17; Mr. F. S. Clarkson, 22; Mr. J. S. Edmeston, 19; Mr. G. Edwards, 7; Mr. J. M. Ferguson, 2; Mr. R. F. C. Francis, 16; Mr. W. Grellier, 6; Mr. Hamilton, 2; Mr. W. J. Hardcastle, 26; Mr. A. Harland, 3; Mr. E. Haslehurst, 8; Mr. G. Inskip, 4; Mr. G. Jackson, 3; Mr. G. A. Lean, 14; Mr. H. Lovegrove, 8; \*Mr. H. McLachlan, 20; Mr. E. Marsland, 32; Mr. T. E. Mundy, 19; Mr. R. C. Murray, 10; Mr. W. H. Nash, 9; Mr. O. Renton, 5; Mr. W. Smallpiece, 12; Mr. L. Solomon, 9; Mr. W. L. Spiers, 9; Mr. W. H. Stevens, 16; \*Mr. H. W. Stock, 20; Mr. E. Street, 32. \*This tie was decided in favour of Mr. McLachlan. The following shows the final voting:—Mr. Ashbridge, 21, 13; Mr. Clarkson, 16, 15, 16; Mr. Hardcastle, 24, 22, 16, 10; Mr. McLachlan, 14; Mr. Marsland, 33, 34, 34, 35, 34; Mr. Street, 24, 21, 29, 22, 10. Mr. Marsland was, therefore, declared elected.

### ART UNION OF LONDON.

A GENERAL MEETING of the members of this association was held on Tuesday, under the presidency of Mr. James Hopgood, on the stage of the Adelphi Theatre. The annual report, read by Mr. J. A. Hallett, showed that the subscriptions of the year amounted to 8,786*l.*, and this sum, considering the continued universal depression, the council thought larger than could have been reasonably expected. The sum allotted for prizes was 2,265*l.*; 564*l.* was set apart towards providing works of art for accumulated payments and for print of the year, almanack, exhibition, report, and reserve, 2,838*l.*, making 5,667*l.*, the balance, 3,811*l.*, representing agents' commission and charges, advertisements, &c. The council had lately had an opportunity of acquiring the copyright of a very faithful portrait bust of the late General Gordon by Mr. R. B. Stocks, a gold medallist of the Royal Academy, and they had to express their acknowledgments to Sir Henry and Lady Gordon for giving much time and trouble to the superintendence of the work with a view to obtain a satisfactory likeness. Copies in terra-cotta were included in the day's distribution and would afterwards be procurable by members in lieu of the print, by adding 20*s.* to the amount of subscription. For the first prize, an original painting, *Vanguard*, representing an incident in the defeat of the Armada, a sum of 210*l.* had been allotted. Other prizes, including 50 terra-cotta busts of General Gordon, 80 sets of designs from English history, 50 portfolios of 24 plates of animal life, numbered 545 in all. A

review of the losses to art sustained through death during the year followed. In moving the adoption of the report the chairman said he regretted that the subject of the prize picture happened to be so applicable to the circumstances of the country at present. He should have preferred it to have been some pastoral scene, but since this picture was the prize on the present occasion, he hoped that, recording as it did the deeds of a gallant admiral and our brave sailors, it would be an omen of success should we unhappily be drawn into a war. The first prize, the painting of the *Vanguard*, valued at 210*l.*, was drawn for Mr. John Fore, of Monte Video (No. 6,300), and the 100*l.* prize fell to No. 6,530, Mr. H. Chilmard, of Brighton.

### ARCHITECTURE AND ENGINEERING.

AT the last fortnightly meeting of the Liverpool Engineering Society, the president (Mr. W. E. Mills) in the chair, a paper by Mr. W. Goldstraw, entitled "The Relation between Engineering and Architecture," was read by the author. It was said that the relations between engineering and architecture are, on a reduced scale, the relations between science and art. Engineering may be said to be that entire system of knowledge and skill which comprises all mechanical pursuits, so far as they supply the material wants of men. Architecture, or the art of ornamental and ornamented construction, as applied to buildings, is the development and refinement of an important branch of engineering. They were both formerly practised by the same persons, but have become separate pursuits on the modern principle of the division of labour; and the requirements of science have made it difficult to follow both professions at once with success. It is desirable that the engineer should be more of an architect, and the architect more of an engineer. At the same time, the two pursuits should be kept even more distinctively separate than at present. But whilst the engineer or the architect practises his special calling only, he should have a considerable knowledge of the other profession. Indeed, as both avocations are concerned with building, it would probably be a successful arrangement sometimes for an engineer and an architect to join in partnership. By this means, if the work done were of good quality, they might get many commissions which either of them by himself would fail to secure, or would imperfectly carry out. In such cases the competing professions and the public would be mutually benefited.

### EXPLORATION IN ASIA MINOR.

A COLLECTION of views taken during expeditions to Asia Minor by Mr. Richard Popplewell Pullan, F.R.I.B.A., is now to be seen at the Burlington House Arts Club. Mr. Pullan gives the following account of the explorations:—

These views are selected from a series of eighty illustrations of expeditions to Asia Minor, undertaken for the purpose of obtaining sculpture, inscriptions, and data for the restoration of Greek temples and other edifices.

There were four of these expeditions. The first was that in charge of Mr. Newton, C.B., Keeper of Greek and Roman Antiquities at the British Museum, for the discovery of the Mausoleum in 1857–58; the second, that for the excavation of the Temple of Bacchus at Teos in 1862; that for the excavation of the Temple of Apollo Smintheus in the Troad in 1866; and that for the excavation of the Temple of Minerva Polias at Priene in 1869. These three were in the charge of Mr. R. P. Pullan.

The Mausoleum was the tomb of Mausolus, King of Caria, and one of the seven wonders of the ancient world. Pliny thought it worthy of a minute description. He even records the names of the artists employed in its construction. He says:—"In the same period Scopas had as rivals Bryaxis, Timotheus, and Leochares, whom I would mention together, as they were associated in the work of decorating the Mausoleum with sculpture. Artemisia made this sepulchre for her husband, Mausolus, Prince of Caria, who died in the second year of the Hundred and Seventh Olympiad. It was chiefly due to the artists whom I have already named that this work was reckoned among the seven wonders. On the south and north it extends 63 feet, being shorter on the fronts; its entire circuit is 411 feet; it is raised in height 25 cubits (37½ feet); round it are thirty-six columns. The part surrounding the tomb was called the Pteron. The sculptures on the east side were by Scopas, on the north by Bryaxis, on the south by Timotheus, on the west by Leochares.

"Before these artists had terminated their labours, Queen Artemisia died; but they did not cease from their work till it was completely finished, regarding it as a monument of their own fame and of art. With these sculptors a fifth artist was associated. Far above the Pteron a pyramid equalled the lower height, contracting, by twenty-four steps, to a point like that of a *meta*. On the summit is a marble chariot with four



horses, the work of Pythios. The addition of this made the height of the entire work 140 feet."

The discovery of the site of this famous edifice was for many years the desideratum of antiquaries. It was at Halicarnassus, now Boudroom, and thither various travellers went in search of it—Captain Spratt, Dr. Ross, and Professor Donaldson amongst the number. The latter observed certain capitals, which he rightly concluded to have belonged to the edifice, but Mr. Newton was the fortunate discoverer of the real site in 1857. Her Majesty's Government despatched the *Gorgon* frigate, and the late Murdock Smith, R.E., with a detachment of Royal Engineers, to aid in the excavations, and subsequently sent Mr. Pullan to assist Mr. Newton. After a year's labour the site was thoroughly explored, all the necessary information obtained, and the remains of sculpture sent to the British Museum. When his work at Boudroom was nearly completed, Mr. Newton removed the expedition to the city of Cnidus. Here he remained another year, and made several important discoveries.

Upon Mr. Pullan's return to England, the Society of Dilettanti—who were the first to encourage research for the purpose of illustrating Greek art—commissioned him to visit the sites of three celebrated temples, and to report upon the facilities for excavation. Mr. Pullan returned to the East in 1861, and took the opportunity thus afforded of exploring the whole west coast of Asia Minor, from the point visited by the Boudroom expedition to the Troad, a distance of between 200 and 300 miles. He visited Ephesus, Sardis, Pergamus, Miletus, Assos, Iassus, and other ancient sites, in the course of his journey. In the spring of 1862 he received instructions to excavate the Temple of Bacchus at Teos; in 1866 the Temple of Apollo Smintheus, in the Troad; and in 1868 the Temple of Minerva Polias, at Priene.

The progress of these various excavations is fully illustrated in these views. Mr. Pullan was, in every case, able to find data for the restoration of these celebrated buildings. The architectural drawings are now in the archives of the Society of Dilettanti, who published them in 1878. It must be remembered that these views are exhibited, not as works of fine art, but simply as illustrations of the progress of these various scientific expeditions.

### NEW BUILDINGS.

**Glasgow.**—The new warehouse belonging to Messrs. Wylie & Lockhead was opened on Monday. It takes the place of one which was destroyed in 1883. The building is noteworthy in several respects. It is the first building in Scotland where terra-cotta has been used as a building material, and it has been constructed throughout with fireproof material, or material so protected that it cannot be affected by fire. Experience in Glasgow and elsewhere has shown that stone walls become disintegrated under great heat, and that iron columns and beams—at one time considered to be proof against fire—are really a source of danger rather than safety if left exposed to the action of fire and then touched with water after they become heated to a certain degree. The walls of the new building are of hard burned brick throughout, set in cement, the outer walls towards Buchanan Street being faced with terra-cotta, which material is quite indestructible by fire. The whole joists, beams, and roofing are of malleable iron, supported on cast-iron pillars, the spaces between the joists being filled with concrete, which is carried below and above the joists so as to imbed them in the material. The beams are in every case covered with cement, and the iron pillars or supports are cased either with terra-cotta or fireclay, so that the whole ironwork is thoroughly protected. There are no open fires in any part of the premises, the heating being done by steam pipes. The only combustible material used is in the necessary wood shelving and counters and wood floor, and even if this woodwork became ignited by any chance, it might be allowed to burn itself out without hurt to the structure. The architecture adopted is Italian Renaissance, a style which has permitted the architects to take full advantage of the facilities afforded for ornamenting the terra-cotta when in a plastic state. Architectural effect is obtained by the substantial-looking pillars and good general proportions of the interior. The external effect of the building has attracted a good deal of attention during its progress, both from the novelty of the design and the material used. With the maximum of window space possible, both on the lower and upper floors, the building, by the arrangement of the main piers, which rise from the street level, looks as if it had proper support from the basement, instead of appearing to be supported on sheets of plate-glass like many warehouse buildings. The terra-cotta was made in Cornwall, from a local clay mixed with a proportion of Devonshire china clay. The whole of the ornamental work was specially designed for the building, and the models made in the city. Compared with stone, an ornamental building of this kind is less expensive, even in Glasgow. The architects were Messrs. Campbell Douglas & Sellars. The

mason and brick work, the building of the terra-cotta, and the carpenter and joiner work have been done by Mr. Alexander Eadie; the malleable iron work by Messrs. P. & W. M'Lellan; and the plaster work by Mr. James Caird. Mr. Alexander Shand was clerk of works.

**Drill Hall, Glasgow.**—A new building for the 5th Lanark Rifles is about to be constructed in Hill Street. Mr. J. B. Wilson has been appointed architect. A writer in a local newspaper, in referring to the work, says "Captain Wilson left nothing undone to secure the erection of a structure in every way fitted to the requirements of the Southern Regiment, and his brethren of the 2nd Northern will, I doubt not, fare equally well at his hands. The hall of the 3rd is to be opened on the 9th prox. with a promenade concert and distribution of prizes, the proceedings beginning at noon with a supplementary bazaar."

### CHURCH BUILDING AND RESTORATION.

**Cheadle.**—The chancel of the ancient parish church of St. Peter, Alton, has been reopened. The west tower, built in the fourteenth century, has been thoroughly and carefully restored, and the chancel remodelled in careful conformity with the original style. The new roof and choir stalls are in English oak. A new organ-chamber has been erected on the south side of the chancel. The nave, with its twelfth-century Norman arcade buried to the depth of two feet below the present floor, has yet to be restored. Mr. J. R. Naylor, of Derby, was the architect, and Mr. J. Fielding, of Alton, the builder. The total cost of the work will be upwards of 1,700*l*.

**Alderminster.**—The interesting old church of Alderminster, five miles from Stratford-on-Avon, has been reopened. The church dates back to the year 1193; it was consecrated in 1200, and given to the monastery of Pershore. It is a perfect cruciform building. Twelve years ago the restoration began, and the chancel and north and south transepts completed. A few years ago the south wall of the nave fell in, and this part of the building had to be held together with timber supports. About 3,000*l*. was spent upon the first portion of the restoration work. The rebuilding of the nave was begun last June. It was found absolutely necessary to take down the walls. The full cost of the restoration, now that the scheme is completed, is about 5,000*l*. The work has been carried out by Mr. Collins, of Tewkesbury, under the direction of Mr. Preedy, architect, of London.

**Wormington.**—The parish church has been reopened after restoration. The church is dedicated to St. Catherine, and consisted of chancel, nave, aisles, and tower with three bells. The work was done by Mr. T. Hopkins, contractor, from plans by Mr. Henry Kennedy, of Bangor.

### GENERAL.

**Mr. R. Knill Freeman** has been appointed architect for the new church of Holy Trinity, South Shore, Blackpool.

**The Architectural Association** held an ordinary meeting on the 24th ult., at which Mr. R. C. Pink was nominated as president, and Mr. J. A. Gotch and Mr. W. H. Atkin Berry were nominated as vice-presidents for the ensuing session. The report of the meeting is held over unavoidably till next week for want of space.

**The Westminster Restoration Committee** have, it is said, agreed to recommend the adoption of Mr. Pearson's plans for the erection of the double cloister along the west wall, with the projecting building at the north end. Sir Charles Barry's plans are to be carried out for the completion of St. Stephen's Porch.

**The School of Design** in Gilmour Street, Paisley, has been sold to the Town Council at the upset price of 4,000*l*. The school is contiguous to the old prison, which was recently acquired by the Corporation for 6,000*l*., and both of these buildings it is proposed to utilise for municipal purposes. A new School of Design is to be erected, as at present proposed, on a site near the Museum and Free Library in High Street. Meantime, the classes will continue to meet in the school in Gilmour Street, the directors paying a rent of 60*l*. to the Town Council.

**A Memorial Tablet** has been erected in St. John's Church, Deptford, to the memory of the Rev. J. Astbury Aston, late vicar of the parish. The design, which was entrusted by the Memorial Committee to Messrs. Newman & Newman, architects, is Late Decorated, and has been executed by Messrs. J. W. Seale & Son.

**A Committee** has been formed in Bedford to collect funds for the erection of two churches—one in the parish of St. Mary, the other in a district to be formed out of portions of the two parishes of St. Peter and Holy Trinity.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MAY 2, 1885.

## PAVING STONES.

A PAPER was read at the last meeting of the Liverpool Engineering Society by Mr. Charles H. Darbishire, A.M.I.C.E., on "Quarrying and the Preparation of Setts." The paper commenced by pointing out that the term "quarry" meant, primarily, the place where the stone was hewn and squared, whereas now it means the place where it is won from the rock, and not necessarily where it is squared. Attention was called to the fact that the dressing of stone, as far as is known at present, was probably one of the first accomplishments man possessed when the race became distinctly human, and that in every age quarrying stone and working it up to serve a useful, or even merely an ornamental, purpose has always been one of the leading industries. At the present day, when traffic has become concentrated into comparatively narrow streets of cities and towns to the extent it has done, exceeding frequently 200,000 tons per yard width of street per annum, the preparation of stone for paving to meet the exigencies of the case is of the greatest importance. The quarry described is situated at Penmaenmawr. The system adopted was fully dealt with, the various duties of the different sets of men being carefully gone into. Examples of the tools in use were exhibited, and they appeared simple enough in themselves, but it was explained that the art lay in using them skilfully. The paper concluded with a brief comparison of the system practically in force throughout North Wales with that under which quarrying is carried on in the large quarries of England.

## THE CORINTH CANAL.

THE last information regarding the canal at the Isthmus of Corinth is as follows:—The works connected with the cutting through of the Isthmus of Corinth will now enter upon a new phase. The two large dredges, *Isthmia* and *Poseidon*, are now quite ready. The changes required in order that they should work properly are about being completed, for when the ordering of these colossal machines was undertaken, only the quality of the soil as at first excavated was taken into consideration; but when, subsequently, it was found that at greater depths the soil varied in quality, new and important alterations to the dredges were necessary, and this has caused the delay in commencing work with them.

The *Poseidon* well commenced work on the Corinth side of the Isthmus about the end of January, and the *Isthmia* about a fortnight later on the Calamati side. Each of the enormous dredges (the largest existing in the world at this moment) is of 300 horse-power. The main chain has 24 buckets attached to it, each of a capacity of 750 lbs., so that on favourable soil each dredge can extract 500 cubic metres of mud per hour. We think, however, that, taking into consideration the variety of the sub-soil on the Isthmus, each dredge is not likely to extract more than 400 cubic metres; this added to what will be dug daily from the sur-

face by other machines. This result will of course not be obtained until the machines are thoroughly understood and in full working order; but it is nevertheless evident that the cutting through of the Isthmus of Corinth will be carried out within the specified time (three years more). Four steam-tugs of various sizes will also be working in conjunction with the dredges. The engineers of the company have lately been engaged in experimentalising on various rocks by hydraulic pressure in order to ascertain whether by this method they would be able to remove the larger blocks. An engine of 50 horse-power and the requisite pumps drive the water from the sea to a distance of 600 metres into iron cylinders, whence it is distributed under a pressure of 10 kilos. to the various pipes by which the soil is searched. Up to this no such trial has been made in Europe. On this account these trials at Corinth are of great interest.

## COMPETITIONS OPEN.

WHITCHURCH.—May 9.—Designs are requested for a Small Cottage Hospital. Major Lee, Whitchurch.

## CONTRACTS OPEN.

ABERDARE.—May 6.—For Building Board School for 227 Boys, in Extension of Cwmaman Schools. Mr. R. Orton Gery, Town Hall, Aberdare.

ALCESTER.—May 11.—For Building Sanatorium or Hospital, with Administrative Buildings. Messrs. Harris, Martin & Harris, Architects, 119 Colmore Row, Birmingham.

ALVES.—May 12.—For Additions and Repairs to Farm Steading, Earnside. Messrs. A. & W. Reid, Architects, Elgin.

AYLESBURY.—May 6.—For Building Three Pairs of Cottages at the Asylum, Stone. Mr. W. F. Taylor, County Surveyor, 25 New Road, Aylesbury.

BALTINGLASS.—May 4.—For Building Dispensary, Residence, &c., Rathvilly. Mr. H. R. Newton, C.E., 202 Great Brunswick Street, Dublin.

BATTLE.—May 13.—For Construction, &c., of Pump. Mr. A. J. Aitchison, C.E., 38 Parliament Street, Westminster.

BICESTER.—May 4.—For Building Retort House, Engine and Meter House, Alterations to Gasholder and Buildings. Mr. Percival Walsh, Secretary to the Gas Company, Bicester.

BLAYDON.—May 5.—For Building Sixteen Cottages. The Co-operative Society, Church Street, Blaydon.

BOSTON.—May 9.—For Building Farmhouses, Navenby and Fishtoft. Messrs. C. Kirk & Sons, Architects, Sleaford.

BOURNEMOUTH.—May 2.—For Constructing Band Stand on Pier Head. Mr. R. W. Peregrine Birch, C.E., 2 Westminster Chambers, Victoria Street, S.W.

BRADFORD.—May 4.—For Building Board School, Fairweather Green. Mr. E. P. Peterson, Architect, New Inn Buildings, Thornton Road, Bradford.

BRAINTREE.—May 6.—For Alterations and Additions to Union Workhouse. Mr. C. Pertwee, Architect, Chelmsford.

BRAY.—May 6.—For Building Dispensary House. Mr. W. Sterling, Architect, 107 Stephen's Green, Dublin.

BRERETON.—May 4.—For Erection of Buildings, Brown Edge House. Mr. W. Woolley, High Street, Congleton.

BRIGHTON.—May 4.—For Building Enclosing Wall, Lewes Road. Mr. Philip C. Lockwood, C.E., Town Hall, Brighton.

BRITON FERRY.—May 11.—For Alterations and Additions to Police Station. The Clerk of the Peace, Westgate Street, Cardiff.

BRYNWERN.—For Building Residence, Stables, Coachman's House, Garden Walls, and Lodge. Mr. Stephen W. Williams, Architect, Rhayader, Radnorshire.

BUNDORAN.—May 20.—For Excavation of Channel in Rock (400 feet), Construction of Boat Slip and Platform, Landing Quay (165 feet), and Inclined Approach. Plans, &c., at the Office of Public Works, Dublin.

BURNLEY.—May 13.—For Erection of Municipal Buildings, Police Courts, and Public Baths. Mr. H. Holtom, Architect, Bond Street, Dewsbury.

BURNOPFIELD.—May 2.—For Building Six Houses. The Co-operative Society, Blaydon.

BURY.—For Excavation for Cellars and Trenches for Foundations, Walshaw Hall. Mr. James Farrar, C.E., 12 Market Street, Bury.

BURY.—May 2.—For Building Fireproof Mill. Messrs. Stott & Sons, Architects, 12 Clegg Street, Oldham.

BYKER.—May 2.—For Building Board Schools for 1,000 Children. Mr. R. J. Johnson, 3 Arcade, Newcastle-on-Tyne.

CAEGURWEN.—May 2.—For Building Mission Church. Mr. E. H. Lingen Barker, Architect, Hereford.

CANNOCK.—May 5.—For Building Board School for 300 Infants at Chadmoor. Mr. Benjamin Baker, Architect, Free Library Buildings, Lichfield Street, Willenhall.

CHELSEA.—May 6.—For Sanitary Turret and Alterations at Old Offices, Arthur Street. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

CLARENDON GRAVING DOCKS.—May 4.—For Construction of Steam Boiler for Pumping Machinery. Mr. T. R. Salmond, Harbour Engineer, Belfast.

COLNE AND MARSDEN.—May 25.—For Forming Brick Barrel Sewer; Building Piers, to carry a wrought-iron Trough; the Raising of an Occupation Road; Laying Iron and Earthenware Pipes, 960 yards. Mr. Henry Bancroft, C.E., 83 Mosley Street, Manchester.

CORNWALL.—May 9.—For Erection of Clubhouse and Buildings, Cornwood, and Schoolmistress's Cottage, Lutton. Messrs. Oldreive & Hingston, Land Agents, Totnes.



CRONDALL.—May 6.—For Alterations and Additions to Mansion at Redfields. Mr. J. A. Eggar, Architect, Farnham, Surrey.

DALTON.—May 4.—For Building Three Shops and Dwelling-houses. Mr. G. Lawrence, Market Street, Dalton.

DEWSBURY.—May 4.—For Supply of Retorts, Fire Bricks, &c. Mr. H. Townsend, Engineer, Saville Town Gasworks, Dewsbury.

DEWSBURY.—May 6.—For Building Shop, House, &c., George Street. Mr. H. B. Buckley, Architect, Old Vicarage, Batley.

DUDLEY.—May 2.—For Building Chapel, Old Hill. Mr. J. Meachem, Cradley.

DUBLIN.—May 5.—For Construction of Public Swimming Baths, Tara Street. Mr. D. J. Freeman, City Architect, Municipal Buildings, Cork Hill, Dublin.

ELGIN.—May 2.—For Additions to Farm Steading and Dwelling-house. Messrs. Macbey & Gordon, Surveyors, Elgin.

ELGIN.—May 9.—For Additions and Alterations to Farm Buildings. Messrs. MacBey & Gordon, Surveyors, Elgin.

ELGIN.—May 8.—For Additions to Farm Buildings. Mr. H. M. S. Mackay, Surveyor, Elgin.

FULFORD.—May 7.—For Building Two Semi-detached Villas, Heslington Lane. Messrs. Fisher & Hepper, Architects, 16 Castlegate, York.

FULHAM.—May 9.—For Completion of Medical Superintendent's House, Lodge, Stores, Reception-rooms and Discharge-rooms, Western Hospital. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

GLASGOW.—May 4.—For Verandah Roofing for Shields and Paisley Canal Stations and Ayr Passenger Station. Drawings, &c., at the Engineer's Office, St. Enoch Station, Glasgow.

GRAYS.—May 9.—For Building Hotel, Tap, and Two Shops. Mr. E. Clerk Allam, Architect, 63 Finsbury Pavement, E.C.

GUILDFORD.—May 13.—For Building Post Office. The Postmaster, Guildford.

HALIFAX.—May 1.—For Building Eight Dwelling-houses. Messrs. Geo. Buckley & Son, Architects, Waterhouse Street, Halifax.

HALIFAX.—May 4.—For Painting Works at Parks. Mr. Escott, Borough Engineer, Town Hall, Halifax.

HALIFAX.—May 4.—For Building Twelve Houses, Savile Park Street. Mr. Joseph Wilson, Architect, Queen's Road, Halifax.

HALIFAX.—May 8.—For Building School Chapel. Mr. James Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

HALIFAX.—May 18.—For Building Shops at Cross Hills. Messrs. Jackson & Fox, Architects, 22 George Street, Halifax.

HASTINGS.—May 11.—For Building Board School for Infants, Clive Vale. Messrs. Elworthy & Son, Architects, London Road, St. Leonards-on-Sea.

HECKMONDWIKE.—May 8.—For Building Four Through Retort Vaults and Setting Twenty Through Retorts, also for Hydraulic Mains, Mouthpieces, and other fittings in connection with Bed of Forty Retorts. Mr. John Green, Manager, Gasworks, Millbridge, Liversedge.

HEYWOOD.—May 5.—For Wrought-iron Retort House and Coal Store Roofs, Hydraulic Mains, Foul Mains, Valves, Retort Fittings, Ascension Pipes, &c. Mr. H. Hawkins, Engineer, Gasworks, Heywood.

HEYWOOD.—May 5.—For Building Retort House, Coal Stores, Retaining Walls, &c. Mr. H. Hawkins, Engineer, Gasworks, Heywood.

HEYWOOD.—May 5.—For Building and Setting 28 Retort Benches, 196 Retorts, and 2 Chimneys. Mr. H. Hawkins, Engineer, Gasworks, Heywood.

HIPPERHOLME.—May 2.—For Building House and Shop. Mr. Joseph Wilson, Architect, Queen's Road, Halifax.

HORWICH.—May 11.—For Building Shops for Locomotive Engines. Plans at the Engineer's Office, Hunt's Bank, Manchester.

HYDE.—May 5.—For Alterations to Station. Plans at the Engineer's Office, 28 London Road, Manchester.

ILKESTON.—May 5.—For Building Retort Beds, Fitting Shop, Chimney-shaft, and other Buildings and Brickwork of Retort-house. The Manager, Gasworks, Rutland Street, Ilkeston.

INNISHOWEN.—May 4.—For Constructing Reservoir, &c. Mr. C. E. Stewart, C.E., Pump Street, Londonderry.

IPSWICH.—For Remodelling and Enlarging Girls' Industrial Home. Mr. E. F. Bisschopp, Architect, 32 Museum Street, Ipswich.

ISLE OF WIGHT.—May 5.—For Extension of Chancel of Yarmouth (Isle of Wight) Church. Messrs. John Colson & Sons, Architects, 45 Jewry Street, Winchester.

KEIGHLEY.—May 11.—For Building Residence, Highfield Lane. Mr. W. H. Sugden, Architect, 25 Victoria Terrace, Keighley.

KEITH HALL.—May 2.—For Building Farm Offices. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

KELSO.—May 6.—For Additions to Farm Buildings. Messrs. M'Gibbon & Ross, Architects, 92 George Street, Edinburgh.

KENDAL.—May 2.—For Reseating Church and Alterations. Mr. Robert Walker, Architect, Windermere.

KINGSWEAR.—May 2.—For Building Retaining Wall and Landing Steps adjoining Yacht Club. Messrs. Best & Commin, Architects, Exeter.

KIRKBY-IN-FURNESS.—May 5.—For Building Eight Dwelling-houses, Four Lane Ends. Mr. J. S. Moffat, Architect, 10 Scotch Street, Whitehaven.

KNIGHTON.—May 20.—For Erection of Workhouse Buildings. Mr. Edwin H. Deacon, Clerk to the Guardians, Knighton, Radnorshire.

LANDPORT.—May 5.—For Enlarging Post Office. The Postmaster, Landport.

LEEDS.—May 4.—For Enlarging Board School, Burley Road. Mr. R. L. Adams, Architect, Imperial Buildings, Bond Street, Leeds.

LEEDS.—May 4.—For Building St. Alban's Vicarage. Mr. W. S. Braithwaite, Architect, South Parade, Leeds.

Established 1820.]

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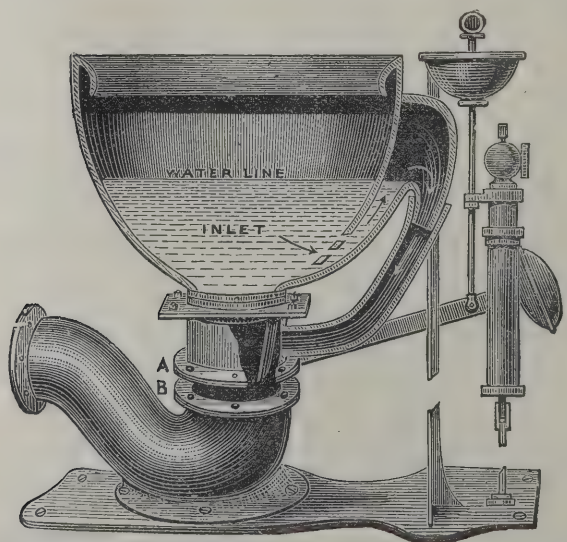
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## THE "SAFETY" VALVE WATER-CLOSET,

WITH

Conolly's Reversible Trap (Patent No. 3,754).



This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weepin pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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LEEDS.—May 5.—For Additions to Chapel and Refurnishing. Mr. T. Howdill, Architect, 40 Park Lane, Leeds.

LEEDS.—May 19.—For Supply of Untrapped Earthenware Gulleys. The Town Clerk, Leeds.

LENTON.—For Building Five Pairs of Villas, Osmaston Estate. Mr. Ernest R. Ridgway, Architect, Long Eaton.

LIMERICK.—May 4.—For Works for Cashen River Drainage District. Mr. W. Barrington, jun., C.E., Clare Chambers, 10 George Street, Limerick.

LLANELLY.—May 12.—For Building Infant School with Boundary Wall and Offices at Lakefield. Mr. E. H. Lingen Barker, Architect, 6 King Street, Hereford.

MARYBOROUGH.—May 4.—For Additions and Alterations to Town Hall. Mr. H. Shaw, Architect, 5 Westmoreland Street, Dublin.

METHLEY.—May 4.—For Construction of Sewerage Works. Mr. T. Fenwick, C.E., 1 Park Place, Leeds.

MONTROSE.—May 5.—For Reconstruction of Inch Bridge. Messrs. Leslie & Reid, 72A George Street, Edinburgh.

MORLEY.—May 7.—For Alterations to Morley Hall. Mr. Wm. Bakewell, Architect, 38 Park Square, Leeds.

MOUNTAIN ASH.—May 11.—For Alterations and Additions to Police Station. The Clerk of the Peace, Westgate Street, Cardiff.

NELSON.—May 2.—For Building Eight Houses, with Garden and Retaining Wall. Messrs. T. Fryer & Co., Nelson.

NELSON.—May 7.—For Building Weaving-shed and Premises. Mr. T. Bell, Architect, Arcade Chambers, Nelson.

NEWCASTLE-ON-TYNE.—For Building Central Co-operative Stores. Mr. Edward Shewbrooks, Architect, 2 Market Street, Newcastle-on-Tyne.

NEWCASTLE-UNDER-LYME.—May 11.—For Building Infirmary, Remodelling Portions of Existing Buildings and other Works. Mr. J. Blood, Architect, Guardian Chambers, Newcastle-under-Lyme.

NEW FOREST.—For Constructing Road. Mr. T. A. Skelton, Architect, 2 Portland Street, Southampton.

NEWPORT.—May 20.—For Construction of Two Improved Beale's Patent Gas Exhausters. The Engineer, Gas Offices, Mill Street, Newport, Mon.

NEWTOWN.—May 5.—For Taking Down and Rebuilding the Dorchester Arms. Mr. W. H. Mitchell, Architect, Portland Street, Southampton.

OLDHAM.—May 2.—For Building Congregational Sunday-schools. Mr. Alexander Banks, Architect, Oldham.

OSSETT.—May 2.—For Supplying and Fixing of Iron Roofing for Shed, Cast-iron Gutters and Pillars, and other Castings, and Iron Sliding doors, at Brook's Mills, Flusshdyke. Mr. R. S. Firth, Architect, Bank Street, Ossett.

PATRICROFT.—May 4.—For Draining, Laying Mains, &c., on Sewage Farm. Mr. C. C. Hooley, C.E., Green Lane, Patricroft.

PILNING.—May 5.—For Construction of Passenger Station. Plans at the Engineer's Office, Paddington Station.

PRESTWICH ASYLUM.—May 13.—For Constructing Circular Concrete Tank with Vaulted Roof. Mr. H. Littler, Architect, Bow Chambers, Cross Street, Manchester.

SALFORD.—For Construction of Covered Reservoir. Mr. A. Jacob, C.E., Town Hall, Salford.

SALTBURN.—May 11.—For Building large House. Mr. W. Peachey, Architect, Scarcroft Road, York.

SELBY.—May 9.—For Building Cemetery Chapel, Boundary Walls, Gates, &c., and forming Cemetery. Mr. W. H. Brayshaw, Surveyor, 45 Finsbury Pavement, E.C.

SHERBORNE.—May 18.—For Construction of Covered Reservoir and Valve Well; Providing and Laying 8,500 yards of Cast-iron Pipes, with Special Castings, &c.; Sluice Valves, Hydrants, and other Fittings; and other Works. Mr. James Mansergh, 3 Victoria Chambers, Victoria Street, London, S.W.

SHEFFIELD.—May 4.—For Building House, Dore Road. Mr. J. B. M. Withers, Architect, 5 Surrey Street, Sheffield.

SHILDON.—May 13.—For Building Waggon and Smiths' Shops. Mr. W. Bell, Architect, Railway Offices, Darlington.

SHIRLEY AND CHILWORTH.—May 14.—For Constructing Two Covered Reservoirs and Small Engine House. Messrs. Easton & Anderson, C.E., 3 Whitehall Place, S.W.

SILVERDALE.—May 4.—For Additions and Alterations to Co-operative Stores. Messrs. Thos. Lewis & Son, Architects, Nelson Place, Newcastle-under-Lyme.

SOUTHAMPTON.—For Building Residence. Mr. J. O. Parmenter, Architect, Kingsfield, Southampton.

SWANSEA.—May 6.—For Supply of Cast-iron Pipes, Irregular Pipes, and Castings for Water Supply Purposes during three years. Mr. R. H. Wyrill, Borough Surveyor, Guildhall, Swansea.

SYDNEY.—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

TORQUAY.—May 11.—For Building Cottage, Kennick Reservoir. Mr. T. S. Weeks, C.E., Waterworks Offices, Town Hall, Torquay.

TOWCESTER.—May 13.—For Erection of Cemetery Buildings, Laying-out Cemetery, &c. Mr. H. Packer, Clerk to the Burial Board, High Street, Towcester.

TRURO.—May 13.—For Erection of Farm Buildings, &c. Mr. A. Michelmores, Tregothnan Office, Truro.

TYLDESLEY.—For Building Wesleyan Chapel. Mr. H. Isitt, Architect, Queen Anne Chambers, Bradford.

UPPER WORTLEY.—For Building House, Shop, and Shed. Mr. C. H. Thornton, Architect, 3 Park Row, Leeds.

WALSALL.—May 7.—For Alterations to Borough Offices, Bridge Street. Mr. John R. Cooper, Town Clerk, Walsall.

WHICKHAM.—May 5.—For Billiard-room, Conservatory, &c., Dunston Hall. Mr. F. R. Wilson, Architect, Alnwick.

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See "Building News," Oct. 12, 1883, in reference to the Mosaic Pictures for the new Church of the Brompton Oratory, executed by this Establishment.

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WHITTINGHAM.—May 18.—For Building Hospital for Infectious Cases. Mr. Lawrence Booth, Architect, 28 Faulkner Street, Manchester.

WIGAN.—For Building Semi-detached Houses. Mr. H. Isitt, Architect, Queen Anne Chambers, Bradford.

WILSDEN.—May 2.—For Building House. Mr. J. Benn, Architect, Denholme.

WOODHOUSE CARR.—May 6.—For Building Eight Houses. Mr. A. Ingham, Mosley Place, Woodhouse Carr, Leeds.

WORTLEY.—May 16.—For Building St. Mary's Church. Messrs. Adams & Kelly, Architects, Imperial Building, Bond Street, Leeds.

WYKE.—May 8.—For Building School Chapel. Mr. J. Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

YOTTENFEWS.—May 8.—For Building Dwelling House. Mr. John Bateman, Yottenfews, Calderbridge, Carnforth.

## TENDERS.

### BOURNEMOUTH.

For Erection of Shelters and Wind Screens (250 feet run) on Pier Head, Bournemouth. Mr. R. W. P. BIRCH, C.E., 2 Westminster Chambers, S.W.

|                                 |        |   |   |
|---------------------------------|--------|---|---|
| Gibbs & Flew, West Kensington   | £2,995 | 0 | 0 |
| Young & Co., Pimlico            | 2,900  | 0 | 0 |
| Trehearne & Co., Battersea      | 2,765  | 0 | 0 |
| James, Bournemouth              | 2,535  | 0 | 0 |
| Rosser & Russell, Charing Cross | 2,498  | 0 | 0 |
| Lawson & Donkin, Bournemouth    | 2,400  | 0 | 0 |
| Jefferies, Westminster          | 2,380  | 0 | 0 |
| CROOK, Southampton (accepted)   | 2,088  | 0 | 0 |

### BRENCHLEY.

For Alterations and Additions to Stabling, Farm Buildings, &c., at Holmleigh, Brenchley, Kent, for Captain Finch. Mr. ALFRED J. HOPKINS, Architect, 10 Berners Street, London, W.

|                                  |      |    |   |
|----------------------------------|------|----|---|
| G. & F. Penn, Pembury            | £268 | 15 | 0 |
| TULLEY, Tudeley, Kent (accepted) | 229  | 0  | 0 |

### CAMBRIDGE.

For Building House, Brooklands Avenue, Cambridge. Mr. W. M. FAWCETT, Architect, 1 Silver Street, Cambridge.

|               |        |   |   |
|---------------|--------|---|---|
| Seymour Bros. | £3,163 | 0 | 0 |
| Sindall       | 2,980  | 0 | 0 |
| Bell & Sons   | 2,880  | 0 | 0 |

### CARDIFF.

For Erecting an Addition to Warehouse in Windsor Road, Penarth, for Messrs. Singer & Co. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

|         |     |   |   |
|---------|-----|---|---|
| Tape    | £37 | 0 | 0 |
| Hancock | 23  | 4 | 0 |

For Extension of Workshop in Galston Street, Cardiff, for Messrs. Purnell & Fry. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

For Erecting Three Shops and Two Houses at Cadoxton, for the Cadoxton Supply Company. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

MARGEREE, EVANS & SIMMONDS (accepted).

### CONWAY.

For Sewerage Works, Conway. Mr. T. B. FARRINGTON, Borough Engineer.

|                                  |      |    |   |
|----------------------------------|------|----|---|
| Jones & Co., Llandudno           | £480 | 6  | 3 |
| Roberts & Brookes, Llandudno     | 355  | 19 | 0 |
| E. Roberts, Conway               | 341  | 11 | 0 |
| R. ROBERTS, Llandudno (accepted) | 333  | 10 | 0 |

For Sewerage Works at Degonning, Conway. Mr. T. B. FARRINGTON, Borough Engineer.

|                               |      |    |   |
|-------------------------------|------|----|---|
| Roberts & Brookes, Llandudno  | £447 | 4  | 0 |
| R. Roberts, Llandudno         | 423  | 18 | 9 |
| Jones & Co., Llandudno        | 382  | 8  | 7 |
| E. ROBERTS, Conway (accepted) | 347  | 0  | 0 |

For Extension of Sewerage Works at Tywyn, Conway. Mr. T. B. FARRINGTON, Borough Engineer.

|                               |      |   |   |
|-------------------------------|------|---|---|
| R. Roberts, Llandudno         | £100 | 0 | 0 |
| E. ROBERTS, Conway (accepted) | 96   | 9 | 0 |
| Jones & Co., Llandudno        | 91   | 3 | 3 |

### CONWAY—continued.

For Sewerage Works at Tywyn and Degonning (No. 2 plan). Mr. T. B. FARRINGTON, Borough Engineer.

|                        |      |   |   |
|------------------------|------|---|---|
| R. Roberts, Llandudno  | £879 | 0 | 0 |
| Jones & Co., Llandudno | 764  | 6 | 3 |
| E. Roberts, Conway     | 724  | 0 | 4 |

For Renewing Gas Mains, Conway. Mr. T. B. FARRINGTON, Borough Engineer.

|                                |      |    |   |
|--------------------------------|------|----|---|
| Jones & Co., Llandudno         | £102 | 17 | 0 |
| Roberts & Brookes, Llandudno   | 101  | 5  | 0 |
| Roberts, Conway                | 94   | 5  | 0 |
| JONES & SON, Conway (accepted) | 98   | 11 | 8 |

For Extension of Water Mains at Colwyn. Mr. T. B. FARRINGTON, Engineer.

|                                    |      |    |   |
|------------------------------------|------|----|---|
| Hughes, Colwyn Bay                 | £122 | 8  | 8 |
| Evans, Colwyn                      | 120  | 0  | 0 |
| Jones & Son, Conway and Colwyn Bay | 115  | 9  | 8 |
| Roberts, Conway                    | 114  | 16 | 6 |
| ROBERTS, Llandudno (accepted)      | 82   | 18 | 0 |

### CORK.

For Construction of Timber Wharf (265 feet long), Penrose Quay, Cork.

|  |        |   |   |
|--|--------|---|---|
| GRADWELL EXECUTORS,* Barrow-in-Furness | £1,465 | 0 | 0 |
| Highest of nine tenders                | 3,597  | 0 | 0 |

\* Lowest and accepted.

### CROWBOROUGH.

For Erection of Cottage at Crowborough, near Tunbridge Wells. Mr. F. V. STOKES, Architect, 3 Essex Road, Acton. Quantities by Mr. A. F. WRIGHTSON, 26 Budge Row, E.C.

|  |        |   |   |
|--|--------|---|---|
| Cheesman & Co., Uckfield                   | £1,540 | 0 | 0 |
| Beale & Son, Tunbridge Wells               | 1,437  | 0 | 0 |
| Norman, Burgess Hill                       | 1,343  | 0 | 0 |
| PUNNETT & SONS, Tunbridge Wells (accepted) | 1,270  | 0 | 0 |

### DOUGLAS.

For Alterations and Additions to Douglas House, Douglas. Mr. K. D. ROCHE, Architect, 25 South Mall.

|                            |      |   |   |
|----------------------------|------|---|---|
| Hill, Cork                 | £815 | 0 | 0 |
| M'Mullin, Cork             | 700  | 0 | 0 |
| O'CONNELL, Cork (accepted) | 650  | 0 | 0 |

MEDALS, STUDENTSHIPS AND OTHER PRIZES, 1885-86.—The Official List of Medals, Studentships and other Prizes, 1885-86, may be obtained from the undersigned, price 3d., or by post FOUR PENNY STAMPS.

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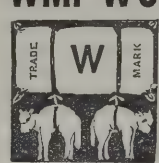
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VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

Yours, &c.

"To Mr. Grundy.

JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard

Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,

July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington,

Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure

in securing their adoption whenever opportunity offers."

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**FERNDALE.**

For Building Billiard-room and other Alterations at the Commercial Hotel, Ferndale. Mr. JOHN WILLIAMS, Architect, Morgan Town, Merthyr Tydfil.  
MORRIS, Ferndale, Pontypridd  
(accepted) . . . . . £720 0 0  
Pring & Co., Pontypridd . . . . . 687 0 0

**GORLESTON.**

For Building Two Dwelling-houses, Gorleston. Mr. GEO. BAKER, Architect, Queen's Road, Yarmouth.  
Barnard . . . . . £435 0 0  
Whur . . . . . 361 19 0  
Plyth . . . . . 316 10 0  
Roberts . . . . . 276 11 0  
POXON (accepted) . . . . . 247 13 10

**GRAYS.**

For Alterations and Additions to Premises, High Street, Grays, for Mr. E. J. Clarke. Mr. E. CLERK ALLAN, M.I.A., Architect, 65 Finsbury Pavement.  
Parvitt . . . . . £615 0 0  
Payne . . . . . 460 0 0  
THOMPSON & SON (accepted) . . . . . 329 0 0

**HASTINGS.**

For Building Row of Shops, with Mansions over, Hastings. Mr. ARTHUR WELLS, 27 Chancery Lane, W.C., and Hastings, and Mr. MARK J. LANSDALE, A.R.I.B.A., Bedford Row House, Great James Street, W.C., Joint Architects. Quantities by Mr. Arthur Wells.  
Longley, Crawley . . . . . £20,300 0 0  
Andrews, Marga'e . . . . . 19,402 7 0  
Perry & Co., Bow . . . . . 19,100 0 0  
Howell & Son, Hastings . . . . . 18,800 0 0  
Sawle, Worthing . . . . . 18,629 0 0  
Staines & Son, London . . . . . 18,490 0 0  
Jarvis, Tunbridge Wells . . . . . 18,400 0 0  
Peters Horsham . . . . . 18,200 0 0  
Adcock, Dover . . . . . 17,492 0 0  
Howell & Son, Lambeth . . . . . 17,470 0 0  
Rodda, St. Leonards . . . . . 17,275 0 0  
TAYLOR BROS., Hastings (accepted) . . . . . 15,995 0 0

**HASTINGS—continued.**

For Repairing and Decorating the Public Hall, Hastings, for the Hastings Assembly Room Company. Mr. ARTHUR WELLS, Architect, 27 Chancery Lane, W.C., and at Hastings.  
Foster . . . . . £136 0 0  
VIDLER (accepted) . . . . . 120 0 0

**HALIFAX.**

For Private Street Improvement Works, Halifax.

**Oak Street.**

Bateman, Wyke . . . . . £45 0 0  
Hopkinson, Halifax . . . . . 41 0 0  
Hudson, Boothtown, Halifax . . . . . 38 0 0  
Kendall, Whitegate, Halifax . . . . . 37 0 0  
Dewhirst, Halifax . . . . . 36 16 8  
Bedford, King Cross, Halifax . . . . . 36 15 4  
Mann, Stannway, Halifax . . . . . 36 9 2  
Tyson & Son, Halifax . . . . . 36 6 8  
DARNES, Siddal, Halifax (accepted) . . . . . 36 0 8  
Estimate . . . . . 36 0 0

**Acorn Street.**

Bateman, Wyke . . . . . £76 0 0  
Darnes, Siddal, Halifax . . . . . 67 0 0  
Hopkinson, Halifax . . . . . 65 0 0  
Dewhirst, Halifax . . . . . 62 0 0  
Kendall, Whitegate, Halifax . . . . . 62 0 0  
Tyson & Son, Halifax . . . . . 60 0 0  
Bedford, King Cross, Halifax . . . . . 58 11 0  
Mann, Stannway, Halifax . . . . . 58 9 4  
HUDSON, Boothtown, Halifax (accepted) . . . . . 58 8 10  
Estimate . . . . . 60 0 0

**Rothery Street.**

Bateman, Wyke . . . . . £206 0 0  
Kendall, Whitegate, Halifax . . . . . 163 0 0  
Hopkinson, Halifax . . . . . 159 0 0  
Dewhirst, Halifax . . . . . 146 0 0  
Bedford, King Cross, Halifax . . . . . 146 0 0  
Mann, Stannway, Halifax . . . . . 144 0 0  
Darnes, Siddal, Halifax . . . . . 141 0 0  
Hudson, Boothtown, Halifax . . . . . 141 0 0  
TYSON & SON, Halifax (accepted) . . . . . 125 3 7  
Estimate . . . . . 147 0 0

**JARROW.**

For Building Board School, Jarrow Grange, Mr. JOHN H. MORTON, Architect. No quantities supplied.  
Yeeles, Jarrow . . . . . £5,730 1 3  
Kennedy, Jarrow . . . . . 4,690 13 0  
Lumsden, Jarrow . . . . . 4,549 0 0  
Storar, Jarrow . . . . . 4,531 0 0  
Kay, Jarrow . . . . . 4,453 0 0  
W. W. & J. Wylam, Jarrow . . . . . 4,193 1 1  
Dixon & Sons, Jarrow . . . . . 3,989 0 0  
FORTUNE, Chathill, near Sunderland (accepted) . . . . . 3,755 0 0

**LEICESTER.**

For Widening the North End of North Bridge, constructing a Storm Water Sewer from Alexandra Street to the River Soar, through the North Bridge Abutment, &c. Mr. J. GORDON, C.E., Borough Surveyor, Leicester.  
Smart, Nottingham . . . . . £814 2 10  
Pilling & Co., Manchester . . . . . 794 19 2  
Jewsbury . . . . . 760 9 8  
Kellett, Leicester . . . . . 697 11 0  
T. & H. HERBERT, Leicester (accepted) . . . . . 595 4 1  
Borough Surveyor's estimate . . . . . 720 0 0

**LONDON.**

For the Maintenance, Cleansing, Watering, &c., for three years, of the Victoria Embankment.  
A. & F. H. Culverhouse, Camden Town . . . . . £6,592 5 0  
E & H. Beevers, Borough . . . . . 6,575 4 0  
Gabriel, Lambeth . . . . . 6,397 5 0  
Williams, Son & Wallington, Shepherd's Bush . . . . . 6,225 8 0  
Aspinall & Son, New North Road . . . . . 6,149 7 0  
Webster, St. Martin's Place . . . . . 5,660 17 0  
Nowell & Robson, Kensington . . . . . 5,410 19 0  
Mowlem & Co., Millbank . . . . . 5,311 13 0  
Turner & Son, Chelsea . . . . . 5,285 7 0  
RUTY, Bromley-by-Bow (accepted) . . . . . 4,626 10 0

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.

# VENTILATION

# WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, Esq., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



**LONDON—continued.**

For Reconstructing with 15-inch Pipe a Portion of the Sewer in Everard Street, St. George-in-the-East.

|                             |      |    |   |
|-----------------------------|------|----|---|
| Studhart . . . . .          | £178 | 11 | 9 |
| Palmer & Sons . . . . .     | 175  | 0  | 0 |
| Nicholls . . . . .          | 173  | 0  | 0 |
| Finch . . . . .             | 162  | 10 | 0 |
| Adams . . . . .             | 155  | 0  | 0 |
| Butler . . . . .            | 139  | 0  | 0 |
| Wheeler & Hindle . . . . .  | 139  | 0  | 0 |
| BALAAM (accepted) . . . . . | 119  | 10 | 0 |

For Repaving Carriage-way and Portions of Footways of Chelsea Bridge.

|                                     |        |   |   |
|-------------------------------------|--------|---|---|
| Nowell & Robson . . . . .           | £1,695 | 0 | 0 |
| Brunswick Rock Asphalte Co. . . . . | 1,450  | 0 | 0 |
| Improved Wood Paving Co. . . . .    | 1,270  | 0 | 0 |
| MOWLEM & Co. (accepted) . . . . .   | 1,216  | 0 | 0 |

For Supplying and Fixing Steam Heating and Ventilating Apparatus at the Royal National Hospital for Consumption, Ventnor, Isle of Wight.

BACON & Co., London (accepted).

**LOSTWITHIEL.**

For Building Dwelling-house, St. Winnow, Lostwithiel. Mr. ALBERT H. CLEMENS, Architect, Truro.

|  |      |    |   |
|--|------|----|---|
| Julian, Truro . . . . .                    | £400 | 0  | 0 |
| Penberthy & Gilbert, Scorrier . . . . .    | 381  | 0  | 0 |
| Bray, Truro . . . . .                      | 372  | 0  | 0 |
| Hunkin, Lostwithiel . . . . .              | 368  | 10 | 0 |
| Jose, Truro . . . . .                      | 355  | 0  | 0 |
| Philp, Lostwithiel . . . . .               | 348  | 0  | 0 |
| Knight & Thomas, Lostwithiel . . . . .     | 346  | 14 | 9 |
| Phillipps & Co. . . . .                    | 335  | 7  | 0 |
| Higgins, Truro . . . . .                   | 335  | 0  | 0 |
| Basset & Burt, Lostwithiel . . . . .       | 320  | 0  | 0 |
| STEPHENS, Lostwithiel (accepted) . . . . . | 290  | 10 | 0 |

**MALVERN.**

For Building the Chance Memorial Church, Malvern. Mr. LEWIS SHEPPARD, Architect, Worcester.

|                                      |        |   |   |
|--------------------------------------|--------|---|---|
| INWOOD, Malvern (accepted) . . . . . | £1,240 | 0 | 0 |
|--------------------------------------|--------|---|---|

**MANCHESTER.**

For Fitting-up the Gymnasium at the Blind Asylum, Manchester.

WILSON, Military Gymnastic Works, Hulme, Manchester (accepted).

**MARYPORT.**

For Construction of Main Sewage Works, Maryport.

|   |         |    |    |
|---|---------|----|----|
| Doherty, Dublin . . . . .               | £14,710 | 8  | 11 |
| J. & J. Reid, Newcastle . . . . .       | 14,171  | 18 | 6  |
| Taylor . . . . .                        | 12,551  | 9  | 3  |
| Brebner, Newcastle . . . . .            | 11,880  | 11 | 5  |
| Beaty Bros., Carlisle . . . . .         | 11,795  | 13 | 11 |
| Elliot . . . . .                        | 10,429  | 2  | 6  |
| McKenzie, Maryport . . . . .            | 10,323  | 11 | 0  |
| G. Smith, Newcastle . . . . .           | 10,224  | 16 | 4  |
| Fisher & Co., Cockermouth . . . . .     | 9,998   | 5  | 8  |
| W. SMITH, Maryport (accepted) . . . . . | 8,989   | 3  | 6  |

**MORLEY.**

For Reseating and Renovation of St. Peter's Church, Morley, near Leeds. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley. Quantities by the Architect.

|   |      |    |   |
|---|------|----|---|
| Taylor, Yeadon, joiner . . . . .                | £370 | 0  | 0 |
| G. & T. Holdsworth, Gildersome, mason . . . . . | 63   | 0  | 0 |
| Wilson, Morley, plasterer . . . . .             | 29   | 10 | 0 |
| Jackson, Morley, plumber . . . . .              | 6    | 15 | 0 |

Total . . . . . £469 5 0

For Building Villa, Victoria Road, Morley. Mr. THOMAS A. BUTTERY, Architect, Paragon Buildings, Morley. Quantities by the Architect.

**Accepted Tenders.**

|  |      |   |   |
|--|------|---|---|
| J. & J. Sugden, Morley, mason, bricklayer, and excavator . . . . . | £360 | 0 | 0 |
| Watson & Son, Morley, joiner . . . . .                             | 188  | 0 | 0 |
| Wilson, Morley, plasterer . . . . .                                | 51   | 0 | 0 |
| Kirk, Morley, plumber . . . . .                                    | 31   | 0 | 0 |
| Atkinson & Son, Leeds, slater . . . . .                            | 30   | 0 | 0 |

Total . . . . . £660 0 0

Architect's estimate . . . . . 680 0 0

**MENSTON.**

For Additions to Church of St. John, Menston. Mr. W. S. BARBER, Architect, 9 George Street, Halifax.

DENISON, Normanton (accepted) £675 0 0

**NOTTINGHAM.**

For Erection of Lace Factory, Lenton Boulevard, Nottingham, for Messrs. T. & W. Sampson. Mr. J. BINDON CARTER, Architect, 3 Clarendon Street, Nottingham.

|   |         |   |   |
|---|---------|---|---|
| Bailey, Nottingham . . . . .                  | £13,932 | 0 | 0 |
| Jay, Nottingham . . . . .                     | 13,763  | 0 | 0 |
| Underwood, Nottingham . . . . .               | 13,200  | 0 | 0 |
| Adams, Nottingham . . . . .                   | 13,000  | 0 | 0 |
| Wooll Bros., Nottingham . . . . .             | 12,800  | 0 | 0 |
| Pillatt & Son, Nottingham . . . . .           | 12,515  | 0 | 0 |
| Messom, Nottingham . . . . .                  | 12,137  | 0 | 0 |
| Brown & Son, Newark . . . . .                 | 12,000  | 0 | 0 |
| Middleton, Nottingham . . . . .               | 12,000  | 0 | 0 |
| Knight, Lincoln . . . . .                     | 11,885  | 0 | 0 |
| Baines, Newark . . . . .                      | 11,755  | 0 | 0 |
| Fish & Son, Nottingham . . . . .              | 11,720  | 0 | 0 |
| H. & W. Butler, Nottingham . . . . .          | 11,650  | 0 | 0 |
| Greenwood, Mansfield . . . . .                | 11,620  | 0 | 0 |
| Hind, Nottingham . . . . .                    | 11,577  | 0 | 0 |
| Bell & Son, Nottingham . . . . .              | 11,550  | 0 | 0 |
| Vickers, Nottingham . . . . .                 | 11,516  | 0 | 0 |
| Dennett & Co., Nottingham . . . . .           | 11,355  | 0 | 0 |
| S. & T. Cargill, Nottingham . . . . .         | 11,250  | 0 | 0 |
| Bott & Wright, Nottingham . . . . .           | 11,247  | 0 | 0 |
| Price, Beeston . . . . .                      | 11,079  | 0 | 0 |
| Keeling, Nottingham . . . . .                 | 10,844  | 0 | 0 |
| Wheatley & Maule, Nottingham . . . . .        | 10,814  | 0 | 0 |
| LYNAM & KIDD, Nottingham (accepted) . . . . . | 10,350  | 0 | 0 |

For Street Improvement Works, Nottingham. Mr. BROWN, Borough Engineer.

|                                |      |    |   |
|--------------------------------|------|----|---|
| Shortland & Co. . . . .        | £215 | 2  | 1 |
| Hopkin . . . . .               | 202  | 10 | 0 |
| Knight, Loughborough . . . . . | 187  | 4  | 0 |
| Meats Bros. . . . .            | 186  | 0  | 0 |
| Cordon . . . . .               | 177  | 11 | 8 |
| Foster & Barry . . . . .       | 159  | 10 | 7 |
| THUMBS (accepted) . . . . .    | 155  | 0  | 0 |

Remainder of Nottingham.

## ARTISTIC ❖ VENTILATION. ❖❖



## SHARP &amp; CO., Hygienic and Hydraulic Engineers.

## TESTIMONIAL

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

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Estimates Free. Architects' Specifications specially attended to,



**NOTTINGHAM—continued.**

|                                   |        |      |
|-----------------------------------|--------|------|
| For Sewering Streets, Nottingham. |        |      |
| Meats Bros.                       | £1,035 | 0 0  |
| Shortland & Co.                   | 927    | 4 3  |
| Thumbs                            | 798    | 10 0 |
| Hopkin                            | 752    | 0 0  |
| Poster & Barry                    | 689    | 5 6  |
| KNIGHT, Loughborough (accepted)   | 572    | 10 6 |
| Remainder of Nottingham.          |        |      |

**ROCHESTER.**

|  |      |     |
|--|------|-----|
| For Building Five Cottages, Cookham Hill, Rochester. Mr. J. W. NASH, Architect, Rochester. |      |     |
| Trueman  | £900 | 0 0 |
| Marshall   | 895  | 0 0 |
| Austen   | 855  | 0 0 |
| Skinner  | 790  | 0 0 |
| Hopper & Seward  | 765  | 0 0 |
| FRY (accepted)   | 725  | 0 0 |
| Alloway  | 630  | 0 0 |

**ROMFORD.**

|   |      |     |
|---|------|-----|
| For Alterations and Repairs to Fox and Hounds Public-house, South Street, Romford, for Messrs. Seabrooke & Sons, Brewers, Grays. Mr. E. CLERK ALLAM, Architect, 65 Finsbury Pavement. |      |     |
| Smith   | £178 | 0 0 |
| HINDS (accepted)  | 135  | 0 0 |

**SOUTH MOLTON.**

|   |      |     |
|---|------|-----|
| For Rebuilding Chimney at the Gasworks, South Molton. |      |     |
| Loosemore   | £136 | 0 0 |
| Thomas  | 115  | 0 0 |
| SANDERS & SON (accepted)                              | 104  | 5 0 |

**SOUTHSEA.**

|   |        |     |
|---|--------|-----|
| For Extension of Premises at the Southsea Steam Laundry, Southsea, Hants. |        |     |
| Burbidge, Southsea  | £1,270 | 0 0 |
| Light Bros., Landport   | 1,256  | 0 0 |
| Lowe, Gosport   | 1,215  | 0 0 |
| Corke, Southsea   | 1,200  | 0 0 |
| Cooper, Landport  | 1,172  | 0 0 |
| BROWN (accepted)  | 1,108  | 0 0 |

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**SOMERSHAM.**

|   |      |      |
|---|------|------|
| For Building Organ-chamber to Parish Church, Somersham, Hants, and Alteration to Tower. |      |      |
| Tweed, Somersham  | £322 | 10 0 |
| Godbolt & Co., Cheveley   | 300  | 0 0  |
| Cowell, Soham   | 299  | 0 0  |
| Bunting, Fenstanton   | 293  | 10 0 |
| Sneath & Setall, Peterborough   | 267  | 0 0  |
| Mills, Cambridge  | 267  | 0 0  |
| Page, Buckden   | 258  | 16 0 |
| WADE, St. Neots (accepted)  | 250  | 0 0  |

**STAPLEFORD.**

|   |        |      |
|---|--------|------|
| For Building a Wesleyan Chapel, &c., at Stapleford, Notts. Mr. GEORGE HASLAM, Architect, Ilkeston. Quantities by the Architect. |        |      |
| Bailey, Sandiacre   | £1,934 | 4 4  |
| Brown & Son, Newark   | 1,700  | 0 0  |
| Haynes, Ilkeston  | 1,665  | 1 0  |
| Brown, Long Eaton   | 1,644  | 15 0 |
| Cooper, Nottingham  | 1,611  | 11 0 |
| Moult, Stapleford   | 1,564  | 0 0  |
| Youngman, Long Eaton  | 1,550  | 0 0  |
| HARPER BROS., West Hallam (accepted)  | 1,439  | 12 0 |

**STAFFORD.**

|   |      |     |
|---|------|-----|
| For Alterations, Additions, and Repairs to the Roof of St. John's Market, Stafford. Mr. W. BLACKSHAW, Borough Surveyor. |      |     |
| Brooks  | £680 | 0 0 |
| Adams & Pemberton   | 676  | 0 0 |
| Harper  | 586  | 0 0 |
| Whitmore  | 569  | 0 0 |
| WOOLLAMS (accepted)   | 520  | 0 0 |
| All of Stafford.  |      |     |

**STRATFORD-ON-AVON.**

|  |      |     |
|--|------|-----|
| For Work at Premises, 28 Bridge Street, for the Stratford-on-Avon Coffee Palace Company. Mr. T. ALLEN, Architect and Surveyor. |      |     |
| Whiteley   | £165 | 0 0 |
| Kennard  | 127  | 0 0 |
| Roberts  | 112  | 0 0 |
| Cox  | 105  | 0 0 |
| Gray   | 105  | 0 0 |

**SWANSEA.**

|  |        |      |
|--|--------|------|
| For Alterations and Additions to Morrision Board School, Swansea. Mr. JOHN HUMPHREY, Architect. Quantities by the Architect. |        |      |
| Morgan, Swansea  | £2,300 | 0 0  |
| Billings, Swansea  | 2,194  | 10 0 |
| Watkins & Jenkins, Swansea   | 2,130  | 0 0  |
| WALTERS & JOHNS, Morrision (accepted)  | 2,093  | 0 0  |
| For Alterations and Additions to 73 Regent Street, Swansea. Mr. W. H. READ, Architect, Corn Exchange, Swindon.               |        |      |

|           |      |     |                                     |      |      |
|-----------|------|-----|-------------------------------------|------|------|
| Wiltshire | £250 | 0 0 | With ashlar front in lieu of brick. | £262 | 0 0  |
| Barrett   | 225  | 8 9 |                                     | 252  | 15 3 |
| Williams  | 220  | 0 0 |                                     | —    |      |
| PHILLIPS  | 215  | 0 0 |                                     | *230 | 0 0  |

\* Accepted.

**WARE.**

|   |        |     |
|---|--------|-----|
| For Erection of New Malthouse for Messrs. H. A. & D. Taylor, Ware, Herts. Messrs. DAVISON, INSKIP & MACKENZIE, Architects, 62 Leadenhall Street, E.C. Quantities supplied by Messrs. Curtis & Sons. |        |     |
| Hitch, Ware   | £7,593 | 0 0 |
| Hunt, Ware  | 7,488  | 0 0 |
| Morter, Stratford   | 7,243  | 0 0 |
| Brown, Son & Blomfield, London  | 6,600  | 0 0 |
| Wontner, Smith & Son, London  | 6,437  | 0 0 |
| GRIMWOOD & SON, Sudbury (accepted)  | 6,420  | 0 0 |

**WORKINGTON.**

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| For Building Two Shops, Pow Street, Workington, for Mr. Henry McAleer. Mr. JAMES HOWES, Architect, Workington. |      |      |
| Lister, McCartney & Lister, excavator, waller and mason  | £344 | 14 6 |
| Bragg, carpenter and joiner  | 170  | 0 0  |
| Perrin, plasterer  | 60   | 0 0  |
| Keenlside, painter and glazier   | 51   | 10 0 |
| Turnbull, smith and plumber  | 43   | 0 0  |
| Whitfield, slater  | 32   | 0 0  |
| All of Workington.   |      |      |

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M.S.A., Architect, 63 Finsbury Pavement,  
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| Proctor . . . . .                 | £2,950 0 0 |
| Wood . . . . .                    | 2,800 0 0  |
| Angood . . . . .                  | 2,730 0 0  |
| Hill . . . . .                    | 2,679 0 0  |
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| J. & J. R. Pettit . . . . .       | 2,546 0 0  |
| Parker . . . . .                  | 2,499 0 0  |
| W. & E. Wallis . . . . .          | 2,498 0 0  |
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| HOWELL & Co. (accepted) . . . . . | 2,320 0 0  |
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| Hughes & Lancaster, Chester . . . . . | £4,107 0 0 |
| Hartley & Arnoux, Stoke-on-           |            |
| Trent . . . . .                       | 3,989 0 0  |
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| Wednesbury . . . . .                  | 3,808 19 4 |
| Renshaw & Co., Kildgrove,             |            |
| Staffordshire . . . . .               | 3,605 0 0  |
| GLENFIELD Co., Kilmarnock* . . . . .  | 3,510 0 0  |

\* Accepted, air reservoirs not included.

**GRANOLITHIC PAVEMENT.**

FROM the judgment which has been delivered by Mr. Sheriff Murray, of Glasgow, in the case Stuart & Co. v. The Scottish Val de Travers Paving Company, it would appear that the word "granolithic" can now be generally used without risk of infringing the Trade Marks Act. His lordship says that the manufacture of a concrete formed by a mixture of crushed granite and Portland cement laid on a foundation of various kinds was a matter free to all the world. The pursuer or plaintiff in the case, Mr. Stuart, adopted crushed granite mixed with Portland cement as his chief manufacture of concrete about ten or twelve years ago. Till 1880 he made it under the name of "granite concrete"; but in that year he adopted the name "granolithic," and got it registered as a trade-mark in November, with the device of a lion rampant supporting a shield, on which the words "Stuart's Granolithic" were printed. The name "granolithic" was a great success. It not only implied that the material was granite, but that it was as hard as a stone. In issuing their schedules, architects, builders, and measurers inserted the word "granolithic" when they wanted offers for granite concrete, quite irrespective of the person who made it. Indeed they issued such schedules to various manufacturers, including pursuers and defenders, showing unmistakably that what they meant by granolithic was the thing, irrespective of the maker. This state of things lasted for two or three years, and the name granolithic thus came into general use as a name for the thing produced, irrespective of the maker's name. Under a new Act the pursuers, on April 29, 1884, registered the word "granolithic" by itself as a trade mark. By this time, however, the word was in general use among architects, builders, and measurers as applied to the manufacture, not only of the pursuers, but other manufacturers. There was really no question in this case of the defenders' misleading, whether in-

tentionally or unintentionally, any person whatever into believing that they were getting Stuart's article when they were really getting defender's article. The defender's circular was perfectly plain, and none but an idiot would suppose that the granolithic there referred to was anything but defender's own work. Laying aside the question of intentional or unintentional misleading, which must be eliminated, Sheriff Murray proceeds to look at the legal aspect of the question, and dealt with five classes of cases, but, in his lordship's opinion, the present one fell under the fourth category—that of *Singer v. Long*—where it was held that a trader has a right to make and sell machines similar in form and construction to those of a rival, and even in advertising to refer to his rival's machines and rival's name, as long as he does so in such a way as to obviate any reasonable possibility of misunderstanding or deception.

**TECHNICAL EDUCATION IN IRELAND.**

THE Commissioners of National Education in Ireland have adopted handicraft as one of the "extra" subjects of the National School programme. The following are the branches of handicraft for proficiency in which result fees may be earned:—

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—To be acquainted with the construction, peculiarities, and uses of the principal tools used in carpentry and joinery, and in any other handicrafts selected by the candidate.

To be acquainted with the various kinds of nails and screws in common use, and to be expert in driving them.

To be acquainted with the chief technical terms used in the handicrafts selected by the candidate. To be prepared to show intelligence and practical expertness in any five of the following (at the choice of the candidate).

1. To prepare and use glue. To plane up the edges of two boards, and glue them together. To make a tenon and mortise joint. To make a simple dovetail joint.

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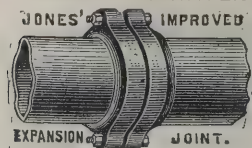
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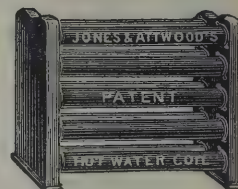
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SILVER MEDAL, 1881.

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3. To plane up, rabbet, and mitre-joint four pieces of wood, so as to form a frame for a tablet or picture.

4. To be acquainted with the several kinds of locks in common use, with their peculiarities. To put on a lock, using, if necessary, a board to represent door, box, &c. To take off an old lock. To take a lock asunder and put it together again.

5. To be acquainted with the several kinds of hinges in common use. To put on a hinge of any ordinary shape, using, if necessary, boards to represent door and jamb, box and lid, &c.

6. To be acquainted with the principal ways of scarfing and splicing. To splice any such thing as a broken broom handle, rake handle, pointer, &c., securing the joint with screws or copper wire, or waxed cord. To make a half lap joint.

7. To cut out and make a rail for clothes-rack, screwing on the hooks. To be acquainted with the different kinds of hooks. To know how to fasten up a rail to a wall by simple plaster-nailing as well as by plugging. To understand the construction of several forms of paling.

8. To know the composition of hard and soft putty. To be able to cut glass, using either a diamond or an American glass-cutter. To hack out a broken pane and put in a new one.

9. To have some knowledge of the ingredients of the most important paints. To mix paint of any ordinary colour, and to paint with it. To understand staining. To prepare a board for staining; to stain, size, and varnish it.

10. To understand the nature of soldering. To tin a soldering-iron. To do any plain piece of soldering, such as fixing in the loose handle of a tin vessel, soldering together two pieces of tin, brass, &c. To do plain rivetting.

11. To mount a map with linen, roller, &c. To mount a travelling map for the pocket. To know how to make paste.

12. To mend a break in any common article

of furniture—a chair, a school-desk, &c. To make any small simple article—a stool, a little box for pencils, a nail-box, a drawing-board, &c.

### LIBELLING BUILDERS.

AN action was tried before the Lord Chief Justice and a special jury on Monday, which had been brought by Messrs. Kirk & Randall, the contractors, for the recovery of damages against the proprietors of the *Bullionist* newspaper for libel. Messrs. Kirk & Randall had undertaken the contract for the construction of the docks at Tilbury. Disputes arose, and the contract was handed over to Messrs. Lucas & Aird. The following version of the transaction appeared in the *Bullionist* on October 25, 1884:—

"Work at the Tilbury extension of the West India Docks Company, which has been interrupted by the failure of the original contractors, Messrs. Kelk & Rendell (meaning thereby the plaintiffs), will be actively resumed on Monday next. The new contractors are Messrs. Lucas & Aird."

This was the libel on which the action was founded. The publication was admitted, but the defendants alleged that in publishing it they had acted without actual malice and without gross negligence. They further pleaded that at the earliest possible moment—viz., November 1, 1884—they had inserted a full apology according to the provisions of Lord Campbell's Act (6 and 7 Vict., c. 96), and they had paid into Court a sum of 10*l.* 10*s.*, alleging that to be sufficient to satisfy the plaintiffs' claim. The apology was in these terms:—

"We extremely regret that through inadvertence a paragraph appeared in the *Bullionist* of October 25, asserting the failure of Messrs. Kirk & Randall, the late contractors for the Tilbury extension of the West India Docks. We now learn that there was no foundation whatever for this statement, and we on the first opportunity which presents itself acknowledge our error and hereby offer our earnest apology

to Messrs. Kirk & Randall. We sincerely trust that Messrs. Kirk & Randall have suffered no damage or inconvenience by our mistake."

The writ in this action was issued in October 1884.

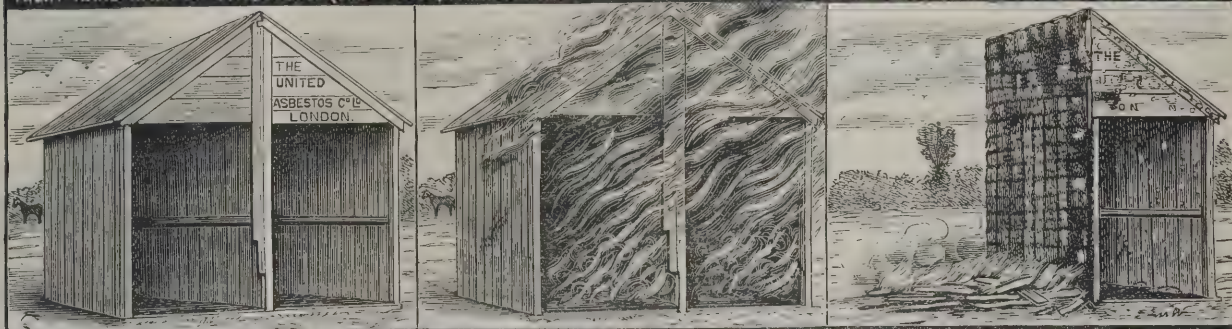
Counsel for the plaintiff said that the libel complained of was necessarily of a character to do great injury to persons in the position of the plaintiffs. They had proceeded with the work under their contract with the East and West India Docks Company at Tilbury (under which they were to be paid some 700,000*l.*) up to June 1884. The work had been found to be vastly more difficult than had been anticipated (the soil proving to be quite different from what was expected), that upon the plant, originally estimated to cost only 50,000*l.*, the plaintiffs had, in fact, expended upwards of 200,000*l.* They had claimed to be paid by the dock company upon a basis which the engineer of the latter had refused to acknowledge. The result of this dispute had been that the dock company had taken the work out of the hands of the plaintiffs. There had been no sort of question as to their solvency and stability, and the dispute between the plaintiffs and the company had been solely due to the fact that the parties had taken totally different views of their rights. The defendants must have been guilty of the grossest negligence in publishing that the plaintiffs had failed, as in the issue of their own paper on July 12, 1884, they had given a report of a meeting held about that time of the proprietors of the East and West India Docks Company, in which, from their paper, it appeared that the chairman had said:—"It was said that the works had stopped, that the contractors were bankrupt, and all sorts of things; but this was not true. They had no reason to believe that the contractors could not continue the works, but there had been some technical dispute which would probably be got over in a few days, and if not the Company was quite able to grapple with any difficulty which arose. The condition of the works was most satisfactory. He had been over the whole of them on Wednesday, and very great progress had been made in the last few

## PUBLIC EXPERIMENTS, ROTTERDAM AUGUST 1884

IN PRESENCE OF ALL CHIEF CITY OFFICIALS AND MEMBERS OF COUNCIL

(From Photographs taken on the Spot)

RIGHT HAND HALF OF STRUCTURE (ALL WOOD) PAINTED WITH 3 COATS OF ASBESTOS PATENT FIRE-PROOF PAINT & THE LEFT HALF LEFT BARE



— BEFORE THE FIRE —

— DURING THE FIRE —

— AFTER THE FIRE —

— BOTH SIDES (12 FT. HIGH x 12 FT. WIDE) HALF FILLED WITH SHAVINGS —

— AND 2 GALLONS OF PETROLEUM AND FIRED. —

## ASBESTOS PAINTS.

ASBESTOS PATENT FIREPROOF PAINT. All wooden buildings or erections should be painted inside and outside with this paint, as a means of protection from fire. All the wooden erections in the INTERNATIONAL FISHERIES and HEALTH EXHIBITIONS were coated inside and outside with this paint by order of the Committee of Directors. ASBESTOS OIL PAINTS, non-corrosive and very durable; suitable for Gasworks, Bridges, Roofing, Wharves, Waggons, &c., &c.

## FIREPROOF PAINT.

Sir FREDERICK BRAMWELL, C.E., F.R.S., Chairman of the Executive Council of the International Inventions' Exhibition, 1885, in referring to the preservation from fire of inflammable building materials, made the following remarks in his Presidential Address at the Institution of Civil Engineers, on January 13th, 1885:—

"The processes, more or less successful, that have been tried are so numerous that I cannot even pretend to enumerate them. I will, however, just mention one, the Asbestos Paint, because it is used to coat the wooden structures of the Inventions' Exhibition. To the employment of this, I think, it is not too much to say those buildings owed their escape, in last year's very dry summer, from being consumed by a fire that broke out in an exhibitor's stand, destroying every object on that stand, but happily not setting the painted woodwork on fire, although it was charred below the surface. I do not pretend to say that surface application can enable wood to resist the effects of a continued exposure to fire, but it does appear that it can prevent its ready ignition."

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weeks." The dock company had paid the plaintiffs 120,000*l.* only for the plant, leaving a balance on this account of 80,000*l.* due to them, Messrs. Kirk & Randall; beyond this there were retentions amounting to 35,000*l.* for work done by them; moreover, they had done a large amount of work in the month of June in respect of which the chairman had offered to Mr. Kirk many thousands of pounds while the dispute was going on; so that there were assets amounting to nearly 200,000*l.*, quite apart from the larger claims against the dock company, which was the subject of an arbitration now taking place. The learned counsel, in conclusion, said he should ask the jury for not excessive but reasonable and proper damages for the serious libel which the defendants by their gross negligence published in their paper.

One of the plaintiffs was called, and stated that they obtained their contracts principally through tenders to dock and railway companies. He said their turnover in the last twelve years had amounted to between two and three millions sterling. The witness was not cross-examined.

Lord Coleridge, in summing up, said that it had been urged that the plaintiffs had been compelled to bring this action, and he thought that such was the fact. The plaintiffs were perfectly right to want in open court, by the mouth of their counsel, to state their real financial position. The defendants had met the case in a handsome spirit, and had made the fullest admission that it was impossible for them to deny their negligence, and that there had never been the very slightest foundation for the libel. The action being wholly undefended, it was a mere question of damages, the plaintiffs being clearly entitled not only to more than the 10*l.* 10*s.* paid into Court, but also in any event to a complete indemnity for all the costs to which they might have been put.

The jury, after deliberating in the box for a few minutes, assessed the damages at 250*l.*

Counsel applied for "higher costs," under Order LXV., rule 9.

The Lord Chief Justice said that he supposed the damages would give the plaintiffs a complete indemnity for their costs.

Judgment accordingly for 250*l.*, with costs.

### HIRING BUILDERS' PLANT.

A CASE was argued in the Court of Appeal on Tuesday which is important as showing the state of the law with respect to the hiring of machinery and plant by builders. The circumstances were as follows:—In October 1884, a builder was adjudicated bankrupt in the Croydon County Court, and a trustee was appointed. At the time of the bankruptcy the builder was in possession of certain mortar-making machinery which he had got from Messrs. Reynolds & Co. on "the hire-purchase system," part only of the purchase money, which was payable by instalments, having been paid. This machinery the trustee claimed as having been in the order and disposition of the bankrupt at the time of the bankruptcy. Thereupon Messrs. Reynolds & Co. brought an action of detinue in the High Court against the trustee. The trustee applied to the County Court Judge for an order to stay proceedings in that action, and that he should determine the question of ownership of the machinery. The County Court Judge refused the application, but a Divisional Court, consisting of Mr. Justice Cave and Mr. Justice Wills, reversed the decision, and granted the trustee an injunction restraining Messrs. Reynolds & Co. from proceeding in the action until further order, on an undertaking by the trustee to be answerable for damages and to proceed with the motion in the Court below with due diligence. Messrs. Reynolds & Co. appealed, and it was stated that the result of the action in the High Court would be of great importance to the trade, as it would be sought to set up a hiring custom in respect of machinery of the kind in question so as to take it out of the reputed ownership clauses, as has been done in the case of hotel furniture and pianos.

The Court gave judgment allowing the appeal.

The Master of the Rolls said when the learned County Court Judge had found that the question was whether the alleged constant practice of builders to hire machinery of this kind, for the purposes of their business, was so well known in the trade that nobody dealing with a builder ought to assume that such machinery was his own, he had said he thought it had better be decided by a superior tribunal. It was a question of the greatest importance to tradespeople, and was precisely one which ought to be tried by a superior tribunal, in order that an authoritative decision might be obtained instead of probably conflicting decisions at different County Courts. The County Court Judge had acted most prudently. The Divisional Court, however, had come to a different conclusion. They were of opinion that the County Court Judge had power to issue an injunction, and that he should have done so, and they had therefore granted the injunction themselves. Sect. 100 of the Bankruptcy Act, 1883, no doubt gave the County Court all the powers of the High Court in regard to bankruptcy. But the High Court itself had not the power which it was contended belonged to the County Court, for since the Judicature Act there was no power in one division of the High Court to grant an injunction to restrain an action in another. The appellants were therefore claiming for the County Court a jurisdiction which did not exist in the High Court. The judgment of the Court below must be reversed.

### TRADE NOTES.

THE gas lighting arrangements at the Albert Palace Exhibition are on a very extensive scale. There are three large meters, one 2,000 light meter for the main building, which weighs between eight and nine tons when charged with water; one 1,000 light meter for the concert hall, and one 300 light meter for the picture gallery and side building. Nearly nine miles of mains and wrought-iron gas pipes have been



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## BUILDING COMPOSITION

Over all other Material for rendering Walls Damp-proof and increasing their strength, is now universally acknowledged by the leading Architects, Engineers, and Contractors.

To meet the rapidly-increasing demand, the Patentee has recently made extensive additions to his Machinery and Plant, which enables him to effect

A REDUCTION OF OVER 25 PER CENT. IN THE PRICE.

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The ONLY MEDAL for ROOFING TILES at the INTERNATIONAL HEALTH EXHIBITION, 1884, was awarded to

H. J. & C. MAJOR,

Late SEALY. Established upwards of 200 Years.

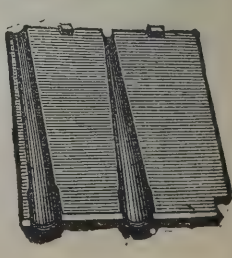
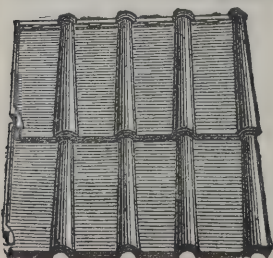
## THE PATENT TILE WORKS, BRIDGWATER.

Sole Manufacturers of Non Porous ROOFING TILES, of various patterns, having C. Major's Patented Improvements, which, forming a double "rabbet" at the top, bottom, and sides of the Tiles, and avoiding cut or unprotected corners, make a secure lap that PREVENTS "WIND-STRIPPING" and ENTIRELY EXCLUDES DRIFTING RAIN AND SNOW.

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A brick on flat and one on edge will enable for Cottages or where great economy is required. It is quite damp-proof and built in strength to a 4-inch wall built with mortar only.

A wall built two half bricks on the flat is much stronger than an 18-inch wall built in the ordinary way.





used in carrying out the work. The building generally is lighted by groups of lights on large brackets and the galleries are mostly lighted with star lights. There are over 3,000 gas burners in the building, and the whole of the work has been carried out in first-class style by Messrs. Strode & Co., of 48 Osnaburgh Street, N.W., and 67 St. Paul's Churchyard, E.C.

A THREE-LIGHT stained glass window has just been erected in the parish church of Twiggworth, Gloucestershire, representing Our Lord preaching on the Mount. The artists are Messrs. Mayer & Co., of Munich and London.

A NEW pulpit has been made for Earls Heaton Church, by Messrs. Jones & Willis, of Birmingham and London. It is of Riga oak, handsomely carved; the style adopted being in harmony with the church, namely, Early Decorated.

MESSRS. FREDERICK YOUNG & Co., office-fitters, cabinet-makers, &c., have removed from their old premises, at 11 Clerkenwell Green, to new and more spacious premises in Greville Street, Holborn, at the rear of the Prudential Life Assurance Company's offices.

A CARVED oak pulpit, the gift of the late Mr. R. Field, of Grimsbury, has been placed in the parish church, Banbury. Mr. C. Claridge, of Banbury, was entrusted with the work, the carved portions of which were executed by Mr. Ketts, of Cambridge.

A MARBLE altar in SS. Peter and Paul's Roman Catholic Church, Wolverhampton, it is intended will be completed before the feast to the patron saints of the church on June 29 next. The design has been furnished by Mr. Cox, of Birmingham, and the work is being executed by Mr. Wall, sculptor, of Cheltenham. The cost of the altar is 400l.

THE revival of an old form of decorative work has just been very successfully carried out by Messrs. Williams & Nash, of Castle Street, Holborn. This form of marble work has been applied to the erection of a reredos at St. John's College Church, Highbury. Another reredos in the same style is also being erected. The system

is as simple as it is effective. The chief requisites are a richly-veined marble, and this, when cut into segments, and the polished sections placed into proper juxtaposition, gives a pattern as perfect as a wood veneer, and the effect can be multiplied and heightened by using variegated marbles of different colours. Of course it is not every marble that is suitable for this style of artistic inlay, or "veneering," as the revivalists call it, as a grain is essential, and the better defined the grain the better the result. In mediæval times this system was frequently employed. It is claimed that the system is economical, durable, and effective. The reredos mentioned above was executed from the designs of Mr. Ewan Christian.

AN ornamental clock, which was designed by the late Mr. Street, R.A., is now being fixed over the north balcony in the Central Hall of the Royal Courts of Justice. The clock is fitted with a white dial, with black hands and figures.

MESSRS. C. ISLER & Co., of 88 Southwark Street, S.E., have received orders from the Executive Council of the Inventions Exhibition to fix eleven more of their turnstiles, making a total of twenty-six. Fourteen are to be fixed in the subway. These are so arranged that they will register the number of people going in and coming out, the indicator being specially adapted to this purpose. The remaining twelve are fixed at the Exhibition entrances.

MESSRS. HEATON, BUTLER & BAYNE, of London, have had a commission for two large windows for the baptistery of Chesterfield parish church, one of which is now erected, and the other is in course of completion. Both windows are designed in the style of the Italian Renaissance. The subject of one is the Presentation of our Lord in the temple, surmounted by rich Renaissance architecture, the upper portion containing a choir of angels singing praises. *Guardian Angels* is the subject of the other window. The angels are designed in the style of Perugino, and hold appropriate emblems—the lily, rose, crowns of glory, palms of victory, trumpets, censers, &c. In the foreground are a

group of angels, each standing in a devotional attitude, while behind, diminishing in size as they ascend, are groups of flying angels with the above-mentioned emblems. The uppermost piece of tracery contains the name of "Jehovah" in Hebrew characters, a belt of clouds dividing it from the angelic host below. The window is surrounded by architecture of similar character to the previous window.

MESSRS. BRUCE & STILL, of the Mersey Galvanising Works, Norfolk Street, Liverpool, have just issued an admirable illustrated catalogue, which shows in the clearest manner the various capabilities of corrugated iron as a cheap and light material for covering large areas, such as exhibitions, halls, and houses, as well as for the largest or smallest class of shed for manufacturing or agricultural purposes, or for export. The catalogue contains thirty illustrations or designs carefully reproduced by lithography and accompanied by explanatory letter-press, so that a design can be readily selected to form an estimate, the particulars of which, being sent to the firm, they will contract for delivering and erecting the work at home or abroad, or furnish plans if required. To give an idea of the scope of the work it may be mentioned that on referring to the illustrations the design of a hospital for 100 beds is found, arranged in five wards, each 24 feet wide, the spacing of bed from centre to centre about 10 feet, there being two rows of beds in each ward—covered passages connect the wards; there are detached rooms for the nurses, and a large detached building for the medical staff. Then there are designs for a farm steading and buildings, and for a coal depôt, &c. There are designs also for cottages, single-room huts, cabmen's shelters, workshops; designs likewise for a church, school, market, public baths, drill-hall, concert-hall, exhibition buildings, hunting-lodge, cricket pavilion, race-stand, band-stand, boat-house, &c. The catalogue is extremely well got up in every way. No small merit is the clear and intelligible manner in which the information is presented, and that elaboration has not been allowed to take a confusing or complicated form.

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# The Architect.

## THE WEEK.

At the meeting of the Royal Institute of British Architects on Monday, the following members of Council were elected:—*President*: Mr. EWAN CHRISTIAN. *Vice-Presidents*: Messrs. EDWARD PANSON, ALFRED WATERHOUSE, A.R.A., and THOMAS WORTHINGTON. *Ordinary Members*: Messrs. COLE A. ADAMS, GEORGE AITCHISON, A.R.A., JAMES BROOKS, ARTHUR CATES, C. R. CHORLEY, J.P., JOSEPH CLARKE, HENRY CURREY, W. M. FAWCETT, CHARLES FOWLER, JAMES FOWLER, J.P., JOHN GIBSON, E. A. GRUNING, OCTAVIUS HANSARD, Professor T. R. SMITH, and ASTON WEBB, with Mr. J. MACVICAR ANDERSON as Honorary Secretary, and Mr. WILLIAM H. WHITE as Secretary. The new Auditors are Messrs. BANISTER FLETCHER and G. H. BLAGROVE. It will be seen that there are several changes. Mr. CHORLEY, Mr. ASTON WEBB, Mr. CHARLES FOWLER, Mr. JAMES FOWLER, and Mr. GRUNING are new members. The provinces are now represented by one vice-president and three ordinary members. Scotland has no longer a representative, and the retirement of Mr. HONEYMAN will be felt also in Conduit Street. The Council is a strong one, and we shall be disappointed if its influence is not beneficial to the Institute.

THE Exhibition of Inventions was opened on Monday and attracted a great crowd of people. During the past year some alterations have been made in the buildings, and two additional galleries have been erected. But nothing has been done to remove the shed-like character of the structures. The expenditure of a small part of the surplus in skilful painting would enhance the appearance of the place, and in pleasant galleries there would not be so strong a desire to reach the grounds in the shortest possible time. Unless the exhibitors can secure the public attention by some extraneous means, it will be unwise for them to expect that they will be more fortunate than their predecessors. The efforts of the authorities have been mainly devoted to the creation of counter attractions. When the orchestra of STRAUSS, various military bands, and other musicians, have entered into a competition, can the exhibitors expect that people will go systematically through the objects entered in the catalogue? In plain English, the inventions are used to give a zest to the music and illuminations. At present the only parts within the exhibition where visitors seem disposed to stay are the Austrian Court and the neighbourhood of the cannon, torpedoes, and military balloon. Even the splendid engines by Messrs. GALLOWAY have not secured a hold on attention. The exhibition, however, contains a vast number of objects which merit careful study, and it is an answer to those who are fond of extolling foreign productions.

THE caricatures of ANDREW GILL were at one time known to every Parisian. The artist took part in the Commune strife with COURBET, MOULIN, and many another artist and writer. He was for a time one of the directors of the Luxembourg, and aided in preserving the pictures amidst the anarchy. The excitement preyed upon him, and it was found necessary to confine poor GILL in the madhouse at Charenton. When he was considered sufficiently sane to be allowed his freedom he returned to Paris, and instead of small portraits of an exaggerated kind, he surprised his friends by painting a life-size, full-length figure of a lunatic confined in a narrow cell, and apparently representing a brief return of consciousness. It was one of those pictures which haunt a spectator, but it was accepted, and was certainly hung in a good position in the Salon of 1882. GILL was dissatisfied when on the first day of May he found it was not on the line, and the disappointment affected his mind. He was brought back to Charenton, where he remained. On Friday in last week, that is, exactly three years after his last attack, death put an end to the misery of the unfortunate artist, and he was buried on Sunday in the cemetery of St.-Maurice. In the lucid intervals during his confinement, he was permitted to accompany a friend to Paris. There was only one object he

cared to see, and that was the Arc de l'Etoile in the Champs Elysées, which for some mysterious reason was always associated with his thought. When he was satisfied with gazing on the structure, he always quietly returned to captivity. GILL was only forty-five at his death.

It will be seen from the report which is printed on another page, that Mr. PEARSON's plans for the restoration of Westminster Hall have been adopted with a few modifications. Many will be surprised with the decision. What it amounts to is that the Houses of Parliament will appear to be extended in a different style, for which there will be no apparent reason. The rational procedure would be to complete Sir CHARLES BARRY's design in the way he proposed. It is evident that there must be much in favour of that design when we find the Committee stating "that the plan which they recommend would not be a bar to the adoption of Sir C. BARRY's plan, should it be found desirable at any future time to complete that plan, though some modification of it might be required." But from experience of governmental departments, it is hopeless to expect the arrival of that day. There is a site now which could be utilised with advantage, but when the new buildings are erected one for any additional government offices which may be needed will have to be found elsewhere at enormous cost.

THE conclusions proposed by Mr. DICK PEDDIE, who represented architecture on the Committee, deserve to be placed on record, although they did not find more than one supporter beside himself. They are as follows:—(1) That Mr. PEARSON's designs for the west side of the Hall have been shown to be without claim to be regarded as a restoration; (2) That the erection of the proposed buildings would detract from the architectural effect of the Hall, and of the whole mass of buildings of which it forms part, and would destroy or shut out from view some of the most striking and interesting features of the Hall; (3) That even the preservation and opening-up to view of the old Norman masonry on the west side of the Hall, which has been represented as one of the chief motives of the design, would not be so well secured by the erection of the proposed buildings as by that of a one-storey cloister or pent-house, forming a gallery along the side of the wall, inasmuch as the old wall, if it is to form one side of a series of committee or conference rooms, must either be left exposed, and so be liable to injury from necessary frequent brushing, or be covered up with a panelled dado and arras, as suggested by Mr. PEARSON, and therefore be very partially and imperfectly seen; (4) That there is no present need for the accommodation which the designs provide; (5) That that accommodation is in itself of an unsatisfactory kind; and (6) That the carrying out of the designs might put an obstacle in the way of providing at some future time, when it may become needed, really useful accommodation.

WOULD it not be possible to obtain another work by RAPHAEL at a cheaper rate than was paid for the Marlborough picture? According to Sir F. W. BURTON, a communication was received in August last from the British Embassy at Madrid, stating that certain documents would shortly be forwarded to the National Gallery Board, authorising the formal delivery of the picture known as the *Colonna*, RAPHAEL, to the Marquis FORTUNATO, the acting representative of the ex-King of Naples, to whom the picture had been bequeathed by the Duke DI RIPALDA. Before these papers could be transmitted, the Marquis FORTUNATO died, and thus the delivery of the picture has been further delayed. But although it still remains deposited in the building, the trustees and director incur no responsibility for its safety.

LOVERS of old silver plate have an opportunity of seeing an interesting private collection of 119 pieces at Mr. PAGE'S in Great Portland Street. It is not for sale. The forms are not always satisfactory; but a beaker of 1589, and one still more remarkable of 1533, a tea-caddy of 1713, a tankard of 1704, and several Apostle and seal spoons will satisfy the most critical. So much use is made of old plate from time to time in pictures, that the exhibition is one which painters should not miss.



## PAINTING AT THE ROYAL ACADEMY.

PUBLIC opinion has already decided that this year's Academy exhibition is excellent, and for once that most fallible of authorities is right. Although it would be difficult to point out any single work of supreme interest, and there is no picture that will sustain repeated studying like the President's *Cymon and Iphigenia* of last year, the pictures are more interesting as a whole than those which have been seen for several seasons. But if the exhibition is a success it is owing mainly to the younger artists. Never before have Academicians laboured so zealously to keep the exhibition at a level below mediocrity. The members of the French Academy of Painting and Sculpture, as we were informed lately in *The Architect*, excluded deserving men on the ground that they might disturb the equilibrium of the institution, and it is now evident our Royal Academy also possesses painters who are believers in that quality. Whether they paint animals, single figures, portraits, landscapes, or what POLONIUS calls "tragical-comical-historical-pastoral" scenes from the Bible, they support each other in preserving equilibrium—but it is one that is more suggestive of the Slough of Despond than of low water. It is, perhaps, unavoidable that painters, like actors, will ignore the time when they begin to lag superfluous, and allowance might be made if there were only a few works which testified to failing eyes and hands. This year, however, it is painfully evident that the ill effects of prescriptive rights are extending, for we see that painters who continue to be as capable as ever of producing good work have suddenly become careless, as if they considered they also had a right to share in the corporate prestige which is the unearned increment of English art.

It may be premised that the alterations in the galleries are advantageous. Water-colour drawings are now found in the room that is handsomest and best lighted, while the engravings, with drawings in monochrome, have a special room adjoining. The assignment of the old water-colour gallery to cabinet works not only allows of more justice being done to the artists than when large and small pictures are hung together; but, if one may judge by the crowds who linger there, it has created a new source of attraction for the exhibition.

The President is eager to foster works of a decorative kind, but there are not many of them in the exhibition. Sir FREDERICK LEIGHTON'S frieze, *Music*, is intended as a companion to *The Dance*, which was exhibited a couple of years ago. It is for a London mansion, of which Mr. AITCHISON is architect, and will be placed in a higher position than it now occupies. If the groups are judged singly, they seem more pleasing than taken as parts of a whole. Unity is as requisite in a decorative work as in a small easel picture, and there is more of it in the frieze for the same house by Mr. W. E. F. BRITTEN (No. 766), which is, from the architect's point of view, the most important example of decorative work to be found in the exhibition. Mr. ALBERT MOORE, from whom so much was at one time anticipated, has only a small nude figure, *White Hydrangea*; but the woman is too conscious of her contours to be employed for a subject of decoration. Mr. POYNTER'S *Diadumene* approaches decoration if it were only on account of the elaborate background, which is so full of detail that at a distance it seems a collection of conventional figures. There are several works which suggest that all we want is patronage for decorative works and the artists can be found. The able and pathetic figure of *Eve*, who is seen wringing her hands in remorse after she has learnt how little has been gained by her disobedience, denotes in its beauty of line a power that is available for ideal work. It is by Mrs. A. L. MERRITT. The *Bridal Eve*, by Mr. HERBERT GANDY, is a poetic rendering of a subject that has been made commonplace by painters. The bride and her attendants belong to no time or country, and the whole arrangement is as imaginative as if the picture had TITANIA for its subject. Mr. ALMA TADEMA, it is needless to say, could, if he cared, produce decoration that would satisfy the most exacting. The outstretched arm of the figure holding the scroll in *A Reading from Homer* might be compared with one of the Sistine sybils. The *Procession of Aphrodite*, by Mr. F. H. JACKSON, is also a proof of aptitude.

Historical painting in the old sense of the term is hardly

better represented than imaginative painting. The style invented by Mr. ORCHARDSON has superseded the usual mode of treatment. It is risky now to depend on antique costume and properties. A few years ago the collection of dolls which Mr. FRITH expects the public to suppose represents *John Knox at Holyrood*, might have been overlooked; at present it excites amazement. It will not do to imitate Mr. ORCHARDSON'S historical method; but who is capable of evolving one that will compete with his? Mr. WYNFIELD, in his *Royal Fugitive*, has adopted so much of the method as consists in leaving a wide interval between the figures, for CHARLES is placed at one end of a long table far away from the guests, but his former historical pictures were as effective. Mr. PETTIE appears to be one of the few artists who can paint history with dramatic vigour; this year, however, he relies mainly on portraits. And yet it must be said that Mr. ORCHARDSON'S *Salon of Madame Récamier* does not tell its story plainly. We have not before us a hostess who is the life of a brilliant society, and whose "flashes of silence" were like the open spaces in the artist's pictures, a means to give relief to something else. The lady is seated in a graceful attitude, but her thoughts appear to be far away from her guests, while several of the latter gaze upon her dolefully as if she were doomed. CUVIER is the most characteristic of the figures, for he contemplates Madame with the supercilious air of a connoisseur in physiology. Is it not time, however, for the artist to attempt some other colour for his backgrounds? The walls are in this case varied by a fine red *portière*, but we should have liked to see a departure from the light colour which Mr. ORCHARDSON adopts, no matter where his scene takes place. Mr. PHIL MORRIS, in his *First Prince of Wales*, paints so fine a figure of King EDWARD I. holding the baby in the hollow of his shield, that we hope to see him grapple with historical scenes. Mr. MAYNARD BROWN'S *Zenobia* is deserving of mention as one of the most important of the historical pictures. It tells the story well without being theatrical, and the grouping is admirably arranged. The picture by Mr. YEAMES, *Prisoners of War*, is entitled to come under this class. It is the best work we have had of late from the artist, and at the present time it will appeal to popular sympathy. It is, however, open to the fault that is so common with English painters when they represent foreign scenes. It is over-emphasised. Two midshipmen have been taken prisoners, and it is suggested by the file of soldiers in the distance and the crowd around, that it has required the expenditure of enormous power to place them in that position. One girl appeals for them, but the people, including sailors, are indifferent, and a priest, if one may judge by his looks, wishes to have the heretics guillotined forthwith. In spite of the insular bravado which artists have inherited from HOGARTH, who knew France from a single visit, the picture, as a piece of story-telling which the world can understand, is capital, and the colouring, with the exception of the harbour, is judicious.

It is difficult to decide with a picture like the latter whether it should be classed with historical or with incident pictures, and the same may be said of many other works in the gallery. Sometimes it is only a question of name. What, for example, is Mr. HODGSON'S large picture *Don Quixote and the Galley Slaves*? The knight is as much historical as the CID or BAYARD. This year painters have been equally afraid to turn to novels as to histories. Mr. HODGSON, like all men who write or discourse much on art, is hampered by fastidiousness, and does not do himself justice. He is a professor, and feels that much is expected from him, and must keep his door barred against that delightful *insouciance* to which so many immortal pictures owe their origin. Mr. BOUGHTON, in his *Milton Visited by Andrew Marvell*, has perhaps more reason to be called historical. It is certainly dramatic without exaggeration. The tremulous earnestness with which MILTON clasps the hand of MARVELL, who was of his brotherhood as a Puritan and a poet, gives reality to the picture and excites a wish for more of a similar kind.

Incident without apparent aid from books has abundant examples this year. One of the first to be found is Mr. STONE'S *Gambler's Wife*, in which the gambling takes place on a lawn after a game of bowls, while the young wife sits disconsolate under a tree, with nurse and child playing on



a terrace above. It is charming as a bit of genteel tragedy. The trunk of the tree, however, spoils all, for it seems to have been copied from some photographer's "properties." There is a superfine air about Mr. STONE's pictures, as if they were produced by perfumed paints, and it is well worth while to compare the gamblers with a glorious bit of comedy in the third room, *The Cupid's Spell*, by Mr. WOODS. Here we see the VAN HAANEN influence at its best. The picture is an out-of-doors scene, and very few around will be found to excel it in planning. The subject is only a Venetian girl spinning, while a fisherman gazes at her with ardour. It is the old story—the *belle dame sans merci* has him in thrall. The scene is laid on a high bank over the sea near a figure of CUPID, and the man's nets have been thrown to dry on the pedestal of the statue. Wild vegetation forms an arch above the pair, and in the distance we see Venice. The picture sparkles with colour and life, and will excite a desire in a good many artists to draw inspiration from a like source. A second example of the sunny south and the new school is Mr. FILDES' *Venetians*. Here, again, is low life. The artist takes a wine-shop for his background. A couple of girls have come to the canal. They are dressed in cottons, of colours that would be called barbarous. One, who is dark, is supposed to be washing, and is too lazy to draw the cloth from the water. The other, a blonde, has a water-jar of the frightful green seen in Italy, and is bedizening herself with vulgar finery. Above, women and children pass, and two men are playing cards. Mr. FILDES has gone out of his way to defy the laws of harmonious contrasts, and even puts green on blue. But the colours merely serve as foils for the beauty of the faces. We have a bit of Venetian life rendered with the joyousness of a summer's day. A third picture should also be mentioned here, although it is a piece of architecture. What the other two pictures are in comparison with most of the former efforts to represent Venetians, Mr. LOGSDAIL's *Ca d'Oro* is in respect of Venice. It shows the building under a fierce light, when all the colours have assumed their pristine brilliancy. Perhaps it will be said that this picture also is vulgar; but the critics should overlook much for the vigour of the view. The new school may see things with an abnormal power of vision, but in a dead-and-alive age so much earnestness with such an enjoyment of colour are novelties. Mr. WEGUELIN's *Swing Feast* is another incident picture which is a token of fresh life. It may seem foolhardy to cope with Mr. ALMA TADEMA on his own ground, but, looking at this picture, it would be unwise to predict who is to have the victory in the course of a few years. Mr. ALMA TADEMA's figures are statuesque; if they had been in action it was suspended while they were being painted. Mr. WEGUELIN shows a couple of girls swinging and enjoying themselves. The details may not have the finish of the elder master, but the vivacity of the figures should make him look to his laurels. A scene from a somewhat later time is Mr. WATERHOUSE's *St. Eulalia*. The body of the martyr is seen lying on the ground, with the head towards the spectator and the arms rigid from extension on the cross. It is a difficult position, but we find none of the old Academic posturing. Snow is falling, doves are flying, and in the background we see the surprised people who are kept in the distance by the stolid Roman sentry. It is the kind of picture that by the slightest exaggeration would become a failure. An almost similar scene was described by Cardinal NEWMAN in his story of "Callista," and we venture to say that the painter vies with the great writer in uniting tenderness and reverence with beauty. Higher praise we could not give.

Mr. TOPHAM has this year gone to "Ivanhoe" for his subject, and the knight bending his lance at the feet of one of the ladies who are present at a tournament gives him an opportunity to display his power in painting the horse. It is a brilliant, many-coloured scene. Very different is the brilliancy of the *Water-Seller, Cairo*, a small picture by Mr. BRIDGMAN, of Paris, which will repay scrutiny as an example of delightful colour and character painting. An English scene, under very bright sunshine, is Mr. WELLS' *Quarrymen at Purbeck*, which suggests the fine field that awaits artists in subjects of the kind.

The portraits this year are in many styles. We are able to compare the methods of Sir F. LEIGHTON and Mr. MILLAIS in the portraits of the two little *Ladies Primrose*. One

suggests the aristocrat, the other the child. Mr. J. S. SARGENT has an Impressionist portrait of *Lady Playfair*, in which he appears to have seized a momentary expression. The hands are better than we have seen in other portraits by the painter, but the long thin line of the right arm looks rigid. Mr. HERKOMER has demonstrated in his portrait of *Miss Katharine Grant* that he is no less competent to paint beauty than sturdiness and character. Mr. ALMA TADEMA in *My Youngest Daughter* retains his specific style. Mr. HOLL is as vigorous as ever in his *Dr. Weir Mitchell*. The picture by Mr. J. D. LINTON, *The Marriage of H.R.H. the Duke of Albany*, is also a collection of portraits, and we suppose the same may be said of *The Ruling Passion*.

The President in his speech at the banquet called particular attention to the variety of landscapes which will be found in the galleries, and here again we find admirable works by young painters; but our notice has already reached a length that may be considered wearisome. The visitor this year will discover in every room more than one landscape which upholds the reputation of the English school.

## ARCHITECTURE AT THE ROYAL ACADEMY.—II.

IT is satisfactory to find that English architects occasionally obtain continental commissions. *Françon, Biarritz*, by Messrs. SALOMONS & WORNUM is an example. If English furniture is becoming fashionable abroad why should not English houses be erected to be in keeping with it? Near the drawing are Mr. E. G. HARDY's three sketches of fonts in Siena, but in a style that has never found favour with the English clergy. Then we see some carefully executed drawings of the church of St. Mary, Madley, Herefordshire, by Mr. F. R. KEMPSON. Mr. KNILL FREEMAN has a small view of a part of the chancel of St. Mary, Worsley, which is so picturesque in detail that it might pass for old work.

We now come to the longest wall. Mr. J. N. JOHNSTON's *Wyburn Grange* loses much of its merit through the weakness of the drawing, of which parts seem like the work of a schoolboy. What draughtsmanship can do may be seen by comparing it with the vigorous sketch of *The Roughters*, by Mr. LANDSELL. Mr. ASTON WEBB's *Alfrick Church*, of which there are two views, is marked by much severity, and, as a restoration, has none of the modern features which are obnoxious in Buckingham Street. Mr. LACEY's *Roadside Inn at Ealing* manifests an endeavour to be picturesque without exactly knowing the right way to attain that end. Mr. T. G. JACKSON's *Brighton College* is a good building, well suited to its purpose, but the drawings are unsatisfactory, and appear to have been completed by an artist who was not clear about the nature of things he had to represent. Mr. MILLARD has a modest but pleasing *Artist's Home*, shown in a very good water-colour sketch. One of the most important drawings in the room is *The Principal Entrance, Constitutional Club*, by Mr. EDIS. As a work of architecture, it enforces unstinted praise. There is only a part of the building to be seen, but it is plain that the detail has been thought out in an artistic spirit, and that colour and form were regarded with equal care. A full-size design for a *Silver Sconce* is by Mr. LETHABY, by whom there is also a drawing of the porch at Chartres. It is a novelty to find a work of Mr. COAD's in the Academy. The woodwork in the two interior views of *Lanhydrock* is skilfully designed. It is plain that the architect was not restrained by parsimony in his client, but the ornamental carving is not excessive in quantity, and is found in its right place. Mr. FERGUSON has several boldly drawn sketches of Naworth Castle, mounted in two frames. Less stable in style of construction is the *Temple of To-Shogun*, which, with two other drawings of a similar kind, have been sent from Tokio by Mr. J. CONDER. The water-colour drawings are striking, but the architecture of Japan is too fantastic, if judged by Western rules. Messrs. BELCHER have a view of the *Premises in Wood Street*. As a grotesque caricature of DÜRER, it may move people to smile, but great as "go" may be, the simpler drawing lately reproduced in *The Architect* would have given visitors a better notion of Messrs. BELCHER's intentions and ability. Carlisle



is not a city where one expects to find attractive houses, and the more credit is to be given to Mr. G. D. OLIVER for his *Residence in Chatsworth Square*, which, with the solidity that befits so ancient a place, is graceful, and appears to be commodious. The church in Gordon Square, which Mr. JOHN BELCHER is completing, is represented by two vigorous drawings of the porch, tower, and spire. Mr. UNSWORTH'S *Warehouse, Star Yard*, is a rather grim-looking building, and suggests that the designer worked under widely different conditions from those which inspired his memorial tower. It is impossible to discern how much in the view of *Blickling Hall* represents Mr. ADAMS'S work as a restorer, but it is needless to say that the drawing is admirable from its lucidity and care. The two pencil views of *Westminster Hall*, showing Mr. PEARSON'S proposed restoration, should now be attractive if the public cared for architecture. Their appearance is most opportune. But from what we saw during the week, the new architectural room is supposed to subserve the same purpose as its predecessor, and to be a retreat from the crush. Some wise authorities say it is an advantage to take a holiday among people of whose language we are ignorant, for we are compelled to remain quiet, and it is probably for a similar reason that visitors sit in front of the architectural drawings. They are incomprehensible, and therefore for a time the attention can be unexcited.

The design for the *Brisbane Town Hall* by Messrs. LEEMING & LEEMING has disappointed people, who appear to think that it is possible to produce a sumptuous building like the War Office even when there is no exchequer to supply funds for its erection. There is a good deal of temperance shown in the treatment of Classic features, but the dome does not enhance the effect. As is usual in such cases, it is suggestive of poverty, for if a dome is indispensable it should be on a scale commensurate with its importance. It is not wise to have a building expressing the principle of "fain would but could not," and nothing does this more emphatically than a cheap dome. The water-colour by Mr. AITCHISON of the *General Office* in the building of the Royal Exchange Assurance Company is more suggestive of cosiness than is customary in places of the kind. Mr. BLOMFIELD has shown much skill in designing London churches with the restrictions of limited sites and frontage abutting on the street. Another proof is given by the *Church of St. John the Baptist, Great Marlborough Street*, in which provision is made for plenty of light, and the height of the tower is no more than is sufficient to give emphasis to the building. The *New Premises, Scarborough*, by Mr. E. BURGESS, is happily treated, and in a style that suits a fashionable resort. Mr. JAMES BROOKS has two churches in the exhibition, which show a master hand. An exterior view is given of *St. Augustine's, Highgate*, with the low plain brick wall of nave extending along the street. The whole building is well proportioned, and, although all churches nowadays appear to depend on limited funds for their existence, in this case there is nothing to suggest an omission of an important feature, as too often happens. *St. John Baptist, Kensington*, is an interior, and its loftiness and richness are worthy of a more liberal age.

Recent competitions have not supplied the room with many drawings. There is one of the many designs sent in for the Exchange at Amsterdam. It is by Mr. SULMAN, and has been inspired by the *genus loci*. Mr. WIMPERIS, in his *Audley Mansions*, gives another example of his successful treatment of West End houses. Mr. BRYDEN'S *Entrance Gable, St. Peter's Hospital*, is a telling work, without any effort to gain effect by sacrificing strength. Mr. MARVIN has a couple of drawings: one is a fragment from a design for the Government offices, showing a court and tower full of character, while the second also shows a corner with flats and offices in a similar style. Mr. T. J. JACKSON'S *House at Kensington Court* is expressive of a desire to make the most of the height of the building in the expression of the vertical lines. Mr. EDIS'S *Badminton Club*, in Piccadilly, is a building approaching completion. The design is well suited to the position, for, as importance is attached to the view, the balconies are carried across between the windows on the different storeys so as to accommodate a great number of members on special occasions. This is a new idea in club architecture, and is sure

to find favour. The balconies are preferable to temporary staging, without affecting injuriously the appearance of the building. Mr. EDWARD HODKINSON, in his *Proposal for New Street Building*, departs from stereotyped arrangements, and shows a massive block with arches below. The drawing is excellent. An example of street architecture which has been realised is Mr. SHERRIN'S *Cannon Street Buildings*. In the drawing the shops are not shown, and this gives strength to the base of the design; but as it is in pen and ink it cannot express the agreeable contrast which is afforded by the red-brick front and stone columns on the various floors. The building is one of the best of those lately erected in the City, but the gilt mouldings, which have been placed around the windows, are not an improvement. The design for the *Cambridge University Laboratory* we like better than most of Mr. STEVENSON'S works. It has more of a permanent character in its appearance than his houses. The use made of coupled columns and rustication is indicative of a nearer approach towards Italian; and in this Mr. STEVENSON does not stand alone. It is a recognition of their position when we find that Messrs. CAMPBELL & SMITH have been asked to prepare a design for the decoration of the library in the Bank of England. The style adopted could hardly be more Classical in the details if the design had been produced in Berlin. The artists' learning and judgment are deserving of recognition. Mr. J. L. BALL'S orphanage is small but well grouped, and the same may be said of Mr. MITCHELL'S *Workmen's Club, Edinburgh*, in which a good position has been well utilised. The *Nicholl's Hospital, Manchester*, is one of the important buildings in that city. The view in the Academy does not show its extent, but gives an idea of the capital tower in the centre of the façade. The design for the *Yarmouth Town Hall*, by Mr. NATTRESS, possesses an elegance and finesse which well merited a premium, but it is not improbable that on account of those qualities it was set aside from the first place.

The *New Stable Offices, Ingestre Hall*, is an effective drawing by Mr. OAKLEY of a meritorious collection of buildings of which Mr. JOHN BIRCH is the architect. Another fine example of draughtsmanship is seen in Mr. S. J. NEWMAN'S *Bishop Fox's Chantry*, but we should have preferred to see his pen employed on buildings of his own. Mr. MERVYN MACARTNEY'S country houses are always attractive. This year he has three, of which the best is *Court Hayes, Oxted*.

When we come to the last of the walls, we find the *Suggestions for the Decoration of St. Paul's*, by Mr. ARMITAGE, R.A. It is a pity that the drawing which shows the dome is only in outline, for in a case of the kind much depends on colour. Mr. ARMITAGE, it will be remembered, painted some of the figures in the *Hemicycle* for DELAROCHE, and out of love for art has painted the walls of humble churches in London. What he proposes therefore for St. Paul's is not the sudden inspiration of a novice in art. The "Te Deum" is the subject selected for illustration. The drum is divided into four sections, and is filled with figures representative of apostles, prophets, martyrs, and the Church in general, on a golden ground. Figures in the niches symbolise the Seven Churches. So far the work is easy. It is when the dome itself is reached that the true difficulty is found. Mr. ARMITAGE believes in a light ground, and proposes that a silvery grey should be used. The Elders are seated at the base, and groups of flying angels are seen above. There is no formal arrangement of ribs and circles, and the decoration will accordingly be declared to want architectural character. But there is as much to be said in favour of the proposal as against it, and Mr. ARMITAGE would do well to work out a sketch in colour. If the dome can be made to suggest the immeasurable heavens when they break open to the highest, much would be gained; but if it is only a sort of scenic display that is possible, then a conventional empyrean would be preferable, or even figures that are not of a supramundane character. The drawing in the Academy is interesting; but as it evades the crucial test of colour it can hardly exercise the influence on the controversy which Mr. ARMITAGE'S position should warrant.

On the same wall there are a few other designs which cannot be overlooked. The remarkable cylindrical hospitals by Sir ANDREW CLARKE and Mr. INGRESS BELL recall the



engravings of the dwellings of the termite ants which are seen in books on natural history. The fine drawing, by Mr. BREWER, of Messrs. HADFIELD'S *Corn Exchange Buildings in Sheffield* has been reproduced in this journal. But the vapours of the town have made the colour of the brickwork look very different from what it appears in the view. Mr. A. E. STREET has a sheet of various designs, which are in excellent style. Lastly we have the *Drumsheugh Baths*, Edinburgh, by Mr. J. J. BURNET, which are amply delineated.

### SIR F. LEIGHTON ON THE ROYAL ACADEMY.

THE duty of proposing the toast of prosperity to the Royal Academy and the health of the President was at the banquet on Saturday entrusted to the Master of the Rolls, who described Sir Frederick Leighton as "the most ardent, sympathetic, and careful teacher of the younger members of his profession and guardian of their interests who had ever sat in the chair he now adorned."

The President in reply said:—The Master of the Rolls has in graceful words asked you to drink prosperity to the Royal Academy and health to its members, and you have responded to his words with a very gratifying cordiality. For that proposal and for that response I offer to him and to you the sincere thanks of the body for which I am privileged to speak. I am embarrassed by the kind words which your indulgence has permitted the Master of the Rolls to use of myself, and the remark which they suggest to me is that the right hon. and learned gentleman is truly an artist in words. Until within a very few days I had nourished a bright hope—I had hoped that no funeral note would jar to-night on the festive key which belongs to such gatherings as these, and that I could have shown you the ranks of the Royal Academy intact and unbroken since the day when last I responded to this toast. In this hope I have been deceived, and we have now to deplore the recent loss of a valued colleague, whose works were well and widely known in this country, more especially among those to whom the hillside and the moor are dear—I mean Richard Ansdell. His once untiring hand has ceased to labour. His memory will live in the esteem of many friends. Meanwhile another hope has found fulfilment. At last we are enabled to redeem our long-given pledge that every inch of ground subject to our control should be laid under contribution for the widening of our area of exhibition, and for the increase of its dignity, for the advantage of artists, and for the public convenience. That pledge is now made good, and the furthest limits of our power of expansion are reached. We throw open to you to-day, and on Monday to the public, an exhibition enlarged by three new galleries, and containing 278 more works than have ever been seen together under this roof. Some 140 more artists are among the successful contributors—that is, 140 more anxious minds have been relieved; and although in the conduct of such an exhibition as this the Council of Selection must needs close its heart to personal motives of every kind, none of us have risen—let me rather say none of us have fallen—to that frame of mind in which the poignant anxieties of our brother artists could be to us a matter of indifference. But it is not in numbers alone that our exhibition has gained; it has gained in artistic decorum. The unavoidable but unseemly jumble in which till now works the most heterogeneous have been thrown together has yielded to a more decent order. The architects at last open out their schemes in a well-lit room and region all their own. Water-colour and pastel are seen in what I cannot but think the most becoming gallery in this building. And, lastly, art in monochrome not only has its own domains, but, as far as the accidental proportion of material admits, its various classes are kept apart and distinct, much assuredly to their individual advantage and to the better adornment of the room. These, then, are the gains which we achieve; and yet, already thus early, our satisfaction is not without alloy. Great as is the increase in our wall space—and we reflect with some disquietude that this increase is final—the hopes and the energies of the artists of this country have more than kept pace with it, and we have found ourselves this year face to face with a number of contributions absolutely without precedent. Not fewer than 9,010 works of various kinds have been submitted to the members of council, and by them sifted, with the result before you. I cannot conceal from myself that even now our widely enlarged hospitality omits, without fault of their own, but to our regret, not a few meritorious works to which we should gladly have extended it. This admission, scanty as is, I fear, its consolation, was yet due to those for whom less has been done than we could have wished, or than they have deserved. And what, apart from numbers, is the character and calibre of this exhibition? I think that it

is, in spite of a temporary lull in the activity of our sculptors—although here also there are bright exceptions—an exhibition of great interest. I do not know how far it will be thought that any one work compels the attention as a work of paramount merit among all the others; but I do know that, if it became me to do so, I could single out works, more than a few, which fill me with wondering admiration. This, meanwhile, is certain—it is an exhibition in which the level of achievement reached is a high one, and embraces effects of the most varied character. In figure painting it includes designs of a purely imaginative type, though of these I should gladly have welcomed more—works of a narrative and dramatic tendency, domestic and idyllic scenes, and, last but not least, portraiture exceptionally powerful and fine. Landscape asserts itself after the heart of Englishmen, and this, too, in much variety, not only in homely transcripts of intimate rustic scenes, of fragrant meadows, or of sunlit downs, but also of renderings of nature in her graver forms and aspects—the sounding coast, the land labour of the sea, and the silence of mist-shrouded hills. The well-filled—I fear over-filled—gallery devoted to water-colour testifies to the vigour and exuberant productions in that branch of art, and the pretty room beyond displays, for the first time in an unbroken front, the etcher's fascinating craft. The note which seems to me to predominate in our show is variety—variety in aims and variety in expressions. May this attribute long distinguish the exhibitions of our Academy, of which comprehensiveness is the strength, and catholicity should for ever be the corner-stone!

### ANCIENT REMAINS IN SULINA.

THE English Vice-Consul gives the following account of remains in his district:—

*Adam-Klissi.*—This is a massive stone structure erected in a solitary spot twelve miles to the south-east of Rasso, on the Danube, and twenty-five miles to the south of Megidie. It is about 36 feet high and 48 feet in diameter. The outer casing of this monument is circular, and is formed of small stones bound together by a cement that has withstood the elements for many a century. A large gap in the eastern partition of this casing reveals an inner wall formed of fine blocks, well fitted together, but not cemented. At the foot of this ancient tower a circular depression in the ground is distinctly visible, showing traces of a former ditch that no doubt protected this stronghold. Hidden from view by a thick brushwood are several large loose blocks of stone, the sculptures on which, though somewhat defaced, are of great interest. They depict trophies of barbarian warriors, chariots, military scenes, and also architectural ornaments like palm-leaves, &c. The date of the construction of this pile is fixed, by Roumanian antiquaries, as far back as the fourth century, and it is of Roman origin. Over fifty new bas-reliefs and several statues have been excavated in recent years. They all represent warlike scenes between Roman soldiers and long-bearded barbarians. In the vicinity of the Adam-Klissi monument there are the remains of a large Roman camp, with its towers and rampart. The principal *enceinte* of the camp measures about 550 yards by 330. The arched entrance gate is still standing, as well as the collection of outer works. The whole forms an imposing mass of ruins.

*Tomis.*—For a long time the site of ancient Tomis was disputed, but it now seems decided that Kiustenge is situated on the site of the old commercial town, or, at any rate, very near it. A great many ancient remains have been found near Kiustenge, and every excavation that takes place brings to light ancient relics and coins, principally belonging to that period of the Roman Empire which is comprised between the reigns of Augustus and Philip. To judge from these coins, Jupiter and Bacchus appear to have been the objects of deep veneration on the part of the inhabitants of Tomis. In several parts of the modern town the remains of foundations of ancient monuments and edifices are visible, and it is reported that during the building of the railway near Kiustenge several statues and stones with inscriptions were dug up and shipped to London.

*Callatia.*—Though there have not been extensive excavations near the modern town of Mangalia, the few inscriptions and coins already discovered on the spot render it probable that Mangalia now occupies the site of ancient Callatia. Some of the coins found near the town depict the head of Hercules with the name of the town, and barbarian war implements on the reverse. A sample of this coin is to be seen at the British Museum. The remainder of the coins represent other Roman emperors. Hercules, the patron of Heraclea, appears, from the coins, to have been the divinity specially honoured at Callatia.

*Istrus.*—No modern town exists on the site of ancient Istrus, a site which has not yet been determined by competent authorities. It is supposed to have been situated on the coast, some twenty or thirty miles south of Tomis, and not far from



a village called Kara-Arman. A certain number of coins, with the inscription of the old town, have already been discovered.

*Troesmis.*—This was one of the numerous Roman military stations. The modern village of Iglitza, about eight miles from Macin, lies near the ruin, situated principally on the adjoining rocky heights. Several interesting inscriptions have been excavated and carried off, principally by French collectors.

*Trajan's Wall.*—This rampart—which completed the line of Roman defences established the whole length of the Danube, forming the frontier of Dacia—commenced between Cernavoda and Hirsova, on the Danube, and terminated at Kiustenge, on the Black Sea. Traces of the wall are still to be partially seen along the line of railway running parallel to it at several points.

*The Temple of Achilles.*—This temple, the few remains of which are to be found on Serpents Island, was noticed by Strabo, who mentions it as having been a magnificent edifice dedicated to the hero of the Trojan war, and looked upon with veneration by the Greeks as the resting-place of the soldiers of Ajax, Achilles, &c. Under the Russian domination many objects of antiquity were transported to Russia. In 1873 a private excavator found two marble slabs which, it is surmised, have been portions of the cornices of the temple, and also some Greek, Roman, Venetian, and Genoese coins. One of these slabs has been recently withdrawn from the island for conveyance to the museum at Bucharest. It is supposed that the ruins of the temple have not been wholly disinterred, and the Roumanian Government intend prosecuting a thorough search.

In addition to the foregoing important historical remains, the ruins of Roman camps and stations are to be seen in several places. There are also several "tumuli" all over the Dobrogea, but they have not as yet been systematically examined to show whether they conceal relics of the past or whether they are merely landmarks.

## TESSERÆ.

### The Influence of Decoration.

GEORGE ELIOT.

HAS anyone yet said what great things are being done by the men who are trying to banish ugliness from our streets and our homes, and to make both the outside and inside of our dwellings worthy of a world where there are forests and flower-tressed meadows and the plumage of birds, where the insects carry lessons of colour on their wings, and even the surface of a stagnant pool will show us the wonders of iridescence and the most delicate forms of leafage? They, too, are modifying opinions, for they are modifying men's moods and habits, which are the mothers of opinions, having quite as much to do with their formation as the responsible father—Reason. Think of certain hideous manufacturing towns where the piety is chiefly a belief in copious perdition, and the pleasure is chiefly gin. The dingy surface of wall pierced by the ugliest windows, the staring shopfronts, paper-hangings, carpets, brass and gilt mouldings, and advertising placards, have an effect akin to that of malaria; it is easy to understand that with such surroundings there is more belief in cruelty than in beneficence, and that the best earthly bliss attainable is the dulling of the external senses. For it is a fatal mistake to suppose that ugliness which is taken for beauty will answer all the purposes of beauty; the subtle relation between all kinds of truth and fitness in our life forbids that bad taste should ever be harmless to our moral sensibility or our intellectual discernment; and—more than that—as it is probable that fine musical harmonies have a sanative influence over our bodily organisation, it is also probable that just colouring and lovely combinations of lines may be necessary to the complete well-being of our systems apart from any conscious delight in them. A savage may indulge in discordant chuckles and shrieks and gutturals, and think that they please the gods, but it does not follow that his frame would not be favourably wrought upon by the vibrations of a grand church organ. One sees a person capable of choosing the worst style of wall-paper become suddenly afflicted by its ugliness under an attack of illness. And if an evil state of blood and lymph usually goes along with an evil state of mind, who shall say that the ugliness of our streets, the falsity of our ornamentation, the vulgarity of our upholstery, have not something to do with those bad tempers which breed false conclusions?

### The Temples at Pæstum.

E. A. FREEMAN.

Few buildings are more familiar than the temples of Pæstum, yet the moment when the traveller first comes in sight of works of untouched Hellenic skill is one which is simply overwhelming. Suddenly, by the side of a dreary road, in a spot backed, indeed, by noble mountains, but having no charm of its own, we come on these works, unrivalled on our side of the Adriatic and the Messinian Strait, standing in all their solitary grandeur,

shattered indeed, but far more perfect than the mass of ruined buildings of later days. The feeling of being brought near to Hellenic days and Hellenic men, of standing face to face with the fathers of the world's civilisation, is one which can never pass away. Descriptions, pictures, models, all fail; they give us the outward form, they cannot give us the true life. The thought comes upon us that we have passed away from that Roman world, out of which our own world has sprung, into that earlier, and fresher, and brighter world by which Rome and ourselves have been so deeply influenced, but out of which neither the Roman nor the modern world can be said to sprung. There is the true Doric in its earliest form, in all its unmixed and simple majesty. The ground is strewn with shells and covered with acanthus leaves, but no shell had suggested the Ionic volute, no acanthus leaf had suggested the Corinthian foliage. The vast columns with the sudden tapering, the overhanging capitals, the stern square abacus, all betoken the infancy of art. But it is an infancy like that of their own Hēraklēs, the strength which clutched the serpent in his cradle is there in every stone. Later improvements, the improvements in Attic skill, may have added grace; the perfection of art may be found in the city which the vote of the divine assembly decreed to Athene; but for the sense of power, of simplicity without rudeness, the city of Poseidon holds her own.

### Loads on Stone.

A. ASHPITEL.

It was observed by M. Rondelet in the course of his very numerous experiments that it was not the heaviest stones which offered the greatest degree of resistance to compression, but those of a fine even grain and close texture with a deep colour; that of granites, the most compact and perfectly crystallised was the strongest, and that when all other qualities were the same the strength was in proportion to some function of the specific gravity. The pillars of the Gothic church of All Saints at Angers, of Fourneaux stone, support on each superficial foot a pressure of 86,000 lbs. The pillars of the dome of the Panthéon at Paris, the lower part of which are of Bagneux stone, support on each superficial foot 60,000 lbs. The pillar in the centre of the chapter-house at Elgin, which is of red sandstone, supports on each superficial foot 40,000 lbs. The piers which support the dome of St. Paul's in London sustain a pressure on each superficial foot of 39,000 lbs. The piers which support the dome of St. Peter's at Rome sustain a pressure on each superficial foot of 33,000 lbs. The pressure on the keystone of the bridge at Neuilly has been estimated for each superficial foot at 18,000 lbs. In regard to these examples, we have to remark that the calculators of them have considered the pressures as uniformly distributed over the pressed surface; but this can only be true when the direction of the resultant of the straining force coincides with the axis of the pier or pillar; besides stones cannot be wrought absolutely level, nor bedded in perfect contact.

### Impediments to Sculpture.

R. WESTMACOTT, R.A.

In this country, sculpture, when it began to assume any position, may be said to have had its impulse from a very debased state of the art. We never had such a preliminary fundamental school as existed on the Continent. We began, as it were, with the mere imitation of the types of an entirely obsolete class of thought; and even then, we, unfortunately, had for our example but the inferior works of an inferior class of scholars and imitators. The commanding genius of Michel Angelo and other eminent sculptors dignified the art they produced, even though its style and false classical sentiment were not in accordance with the sympathies of the people to whom they were exhibited. But their less gifted followers helped still further the downward course of the art, by at last ignoring altogether the simplicity and the concentration that is, or should be, a characteristic of all good sculpture. Their object was to gain popular favour by the exhibition of daring execution and elaborate finish, in flying draperies, bold undercuttings, the close imitation of the commonest objects—as veils and nets—and in similar unworthy though ingenious puerilities. The miserable and fallen condition of sculpture after the time of Bernini—an artist of most powerful genius had it been rightly directed—and when the standard of excellence was the fanciful *tours de force* of Roubiliac and Rysbrach, seemed to render further debasement impossible. Yet these were the artists from whom the impulse of sculpture was received among us; and the indisputable merit of Roubiliac, in his own particular way, added to his immense popularity, had rendered the example still more attractive and pernicious. The few natives of England who professed the art offered no exception to the bad taste that had gained public approval and patronage; on the contrary, the prejudice that existed in favour of employing foreigners impeded the progress and improvement of our own sculptors, even had any one of them shown sufficient genius to strike out a better path for himself.



**Rustication.**

W. H. LEEDS.

Rustication, contrary to the idea the term itself at first suggests, so far from producing an air of rudeness, coarseness, or negligence, is not incompatible either with richness or delicacy of finish; or rather, accordingly as it is treated, and as the subject itself may require, it is capable of great diversity of expression, from that of stern massiveness to that of refined elegance. It is somewhat singular, therefore, that those who have professed to be of the Italian school should have confined themselves nearly to one single species of rustication, and have made use of that mode only for basements. Of late years it has been the practice to substitute for the more architectural form of rustication, the insipid fashion of making merely horizontal grooves or joints; which, instead of producing any richness of surface, or amounting to decoration, only occasions an excessive monotony, arising from so many horizontal lines. In some cases it is not otherwise of any moment than that the degree of effect, which might have been attained, has been lost, there being nothing else in the designs themselves to be injured by it; but this horizontal striping shows itself most flagrantly in the Goldsmiths' Hall, where it renders the whole of the ground floor utterly at variance with the rest of the building, which is as remarkable for its heaviness, and the somewhat exaggerated and *outré* character of its decoration, as the lower part is for its bareness, its tameness, and its insipidity. The same disagreeable contradiction shows itself in the façade of the City Club-house, where a very mediocre and commonplace specimen of Italian architecture is placed upon a striped basement.

**The Lotus.**

W. A. BROMFIELD, F.L.S.

The lotus flower and the papyrus have wholly disappeared from the rivers and marshes of Egypt: the rumour of the Papyrus still lingering in the vicinity of the Lake Menzaleh roving, it seems, a mistake, another species having been confounded with the true papyrus of antiquity, which is *Papyrus antiquorum*, *Cyperus papyrus* (Linn). Poor Egypt! how she has been shorn of all her boasted splendours, even to her very garlands of lotus flowers, and how literally have the words of the prophet been fulfilled in the single and apparently unimportant, as in so many more remarkable and weighty instances:—"The reeds and flags shall wither; the paper reeds by the brooks, by the mouth of the brooks, and everything sown by the brooks, shall wither, be driven away, and be *no more*." (Isaiah xix. 6, 7.) In like manner the lotus, once so celebrated and so constantly represented in Egyptian paintings, and popular as an architectural ornament, has quite disappeared from the Nile; and it is remarkable that in every part of this interminable river that I have traversed, from Alexandria to Khar-toum, a distance of 2,000 miles, I have not found half a dozen truly aquatic plants.

**Ancient and Modern Paints.**

R. LIEBREICH, M.D.

We meet very often with the idea that the old masters had been in possession of colours—that is, pigments—the knowledge of which has been lost, and that this accounts principally for the difference between the oil paintings of the fifteenth and sixteenth centuries on the one hand, and that of the eighteenth and nineteenth on the other. But this is a great mistake. We know perfectly well the pigments used by the old masters; we possess the same, and a considerable number of new ones, good as well as bad, in addition. In using the expression good as well as bad, I am principally thinking of their durability. From this point of view the pigments can be placed under three headings:—(1) Those which are durable in themselves, and also agree well with the other pigments with which they have to be mixed. (2) Such as when sufficiently isolated remain unaltered, but, when in contact with certain other pigments change colour, or alter the others, or produce a reciprocal modification. (3) Those which are so little durable that, even when isolated from other pigments, the mere contact of the vehicle, the air or the light, makes them in time fade, darken, or disappear altogether. The old masters used without reserve only those belonging to the first of these three categories. For those belonging to the second they imposed on themselves certain limits and precautions. Those belonging to the third they did not use at all. That some of the modern masters have not followed these principles is not owing to a lost secret, but to the fact that they disregarded those well-known principles, and even consciously acted against them. In Sir Joshua Reynolds's Diary, for instance, we read that in order to produce certain tints of flesh he mixed orpiment, carmine-lake, and blue-black together. Now orpiment is one of the colours of the second category, carmine-lake one of the third. That is to say, orpiment, as long as it remains isolated, keeps its brilliant yellow or reddish-

orange colour; but when mixed with white-lead it decomposes, because it consists of sulphur and arsenic, and it moreover blackens the white-lead, because the sulphur combines with it. Carmine-lake, even if left isolated, does not stand as an oil-colour, and therefore has been superseded by madder-lake.

**Ancient Colours.**

SIR M. D. WYATT.

The colours employed in the paintings of Pompeii have been subjected to chemical analysis, originally by the great French chemist Chaptal, and since then by Davy, by Faraday, and many other *savants*, down to M. Chevreul, and they have been found to be as nearly as possible identical with those used on the monuments of Greece and Sicily. In the investigations of the most eminent chemists, traces of organic matter have been found in all the colours of Pompeii and Sicily. The Greeks call that vehicle "Sarcocolla," and it appears, from the evidence of Sir Humphrey Davy and others, that it was little else than size. That such a material was used is evident, because although the lime would cause the lighter tints to adhere, it would be impossible to use sufficient lime in the parts intended to be of darker tints, to cause them to adhere, without lowering considerably the depth and beauty of the colouring. It is a curious circumstance that in the Egyptian colours a resinous composition has been found, which is in the nature of a varnish. In the colours of Greece we find wax, but no trace of lime; whereas in those of Sicily and Pompeii lime is, in all cases, found with the organic matter, and in those of Etruria without it. A similar absence of organic matter, and traces of the presence of lime, has been observed in analyses of the Gallo-Roman remains which have been found in France. The Romans divided their colours into the "austere" and the "florid." The early Greek artists had but four colours—white, red, black, and yellow—which were entirely composed of earths found in the neighbourhood of Athens. Subsequently "cœruleum," or blue, was discovered and used as a frit or smalt, consisting of carbonate of soda, with a little copper and some lime. The austere colours were in most common use, including the red which came from Sinope in Pontus. The Greeks appear to have brought these colours into fashion in Italy, because in our analysis of the Etruscan colours we find that such as were used in Italy, previous to the advent of Greek artists, were made from earths existing in the neighbourhood of the painted monuments, whereas those of Rome and Pompeii were brought from a great distance—from the Greek colonies, from Egypt, and other places. The principal colours used in Pompeii were red, usually the earth from Sinope; blue, or cerulean, which is the Egyptian frit, analysed by Sir Humphrey Davy; yellow ochre and white. For the latter, the ancients frequently used a white earth, or rather a sort of china clay, but in Pompeii it is found to consist entirely of lime.

**Contrasts of Colour in Nature.**

W. BARNES, M.A.

I have collected from time to time in my walks, within a rather small range, cases of the contact of sundry pairs of colours on natural bodies, and find of white and yellow ten or twelve cases in flowers and birds; white and orange, some cases, as in the petals of the horse-chestnut and in the orange-tip butterfly; white and red, in several plants, lepidoptera, and birds and eggs; white and purple, mostly in blooms; white and green, in ten or twelve species of plants, and among birds in the shoveller, wild duck, and peacock; white and black, in the bean blossom, some few insects, and nearly twenty species of birds; yellow and orange, in the corolla of the toad-flax and in the brimstone butterfly; yellow and red, in manifold cases of flowers, and in some coleoptera and more lepidoptera. Mr. Layard found a deep dull red, and a bright yellow mingled with black, much worn by a tribe, we believe, in Asia; they had good warrant for their choice of hues. Purple and yellow and yellow and blue are found together in some blossoms, and the blue of the sea and the yellow of the sand are a striking pair of hues in the wilderness of Sinai. Yellow and green, in more than twenty blooms, and a few coleoptera and four orders of insects; and some birds wear yellow and black. The lepidopterous insect, "*Colias edusa*," is bright with orange and green, and others shine in orange and black, while orange and purple and red and purple have tinted several kinds of flowers. Of red and green the cases are manifold in flowers, with the cicindela and curculio. Red and black mark flower, beetle and butterfly, as purple and green tinge many a shining petal. Blue and black are worn by several butterflies, and green and black marks the teal, the peacock, and the eggs of the guillemot. These cases of the by-setting of colours are but a very small share of an almost infinite multitude, as they have been gathered from the flora and fauna of a few miles, with a few foreign insects; but yet, as far as they reach, they seem to betoken some mark-worthy facts.



## NOTES AND COMMENTS.

A FRENCH imitation of *Vanity Fair* has at last appeared, with the title *Silhouettes Parisiennes*. It will contain weekly a portrait of some French notability, and the co-operation has been secured of M. CHARTRAN, who has drawn some of the portraits in the English journal. A calendar of fashionable events for the ensuing week will also be made a regular feature.

THE famous comedian REGNIER, who died last week in Paris, resembled the late CHARLES MATHEWS in being connected with architecture. But while the latter did pass through a state of pupilage, and, it is said, for a time tried to gain commissions, REGNIER was not competent to go through the first competition among students of architecture at the Ecole des Beaux-Arts. He had not the courage to try again, and abandoned architecture for the stage. During his career he created or appeared in over two hundred and fifty rôles. M. ESCALIER, the architect, was his son-in-law.

M. DE NEUVILLE has painted so many English military scenes that he can hardly now be considered a foreigner. After many months of acute suffering he is still unhappily an invalid. A few days ago M. DE NEUVILLE went through the form of marriage in his chamber with Mdle. MARESCHAL. The witnesses were his attached friends MM. DETAILLE, BERNE-BELLECOUR, LE BLANT, DUEZ, and ROGER JOURDAIN, the painters. Although still young, M. DE NEUVILLE has an European reputation, and his illness will excite general sympathy.

THE city of Epidaurus contained a temple of Æsculapius, and, from the commercial connections of the citizens, the building was able to attract patients from all parts of the world. It fulfilled the purpose of a modern German watering-place. According to a late account, an inscription has been found containing about three hundred lines, which is said to be a record of the sums expended on the construction of the temple. It is supposed to date from about the fourth century before the Christian era. In the course of explorations the head of a small statue of the god-physician was also found, and a part of another statue. Both are said to be of splendid workmanship.

M. BONNAT, the French portrait-painter, is to be made a commander of the Order of Leopold, in recognition of his assistance to the last triennial exhibition at Brussels, and MM. DELAUNAY, FANTIN LE TOUR, and HEILBUTH will be nominated among the chevaliers.

THE Marquis of BUTE has subscribed 500*l.* towards the erection of the new Catholic church which is to be built on the site of the existing building at Turnham Green. His lordship has an interest in the work, being the tenant of the Duke of DEVONSHIRE'S house in Chiswick; that famous villa where so many politicians used to meet, and where Fox and CANNING died. The present church is Gothic in style, but the new building, which is to be erected from the designs of Mr. KELLY, of Leeds, will be Italian or Roman.

THE mysterious property which is known to building labourers as "Sticktion" is not confined to this country. On the Continent it also aids in keeping structures together, in defiance of all the laws of the philosophers about the strength of materials. It has been discovered that a wall of the assembly-room of the Hôtel de Ville in Brussels is in parts half a brick in thickness. Yet this thin partition carried one of the iron beams which supported the public gallery, and during all the meetings there was no sign of vibration. The building is about to be entirely remodelled.

THE election to the art mastership of the Wolverhampton Art School has engrossed a good deal of attention from students in training and prospective candidates. The arrangements can hardly be said to show a recognition of the services of Mr. GUNN, who has been associated with

the old school from its commencement. There has been another meeting, and the General Purposes Committee of the Town Council, after reconsidering the question, have decided to adhere to their former recommendation—viz., for the Council to advertise for candidates for the post, urging that only by open and fair competition can the best man be secured. They consider, however, that if all things are equal, Mr. A. GUNN should have the preference. The School of Art and Art Gallery Committee have likewise again recommended that the post be advertised.

IT is recorded that King JOHN visited Kingston-on-Thames several times, and in 1200 granted a charter to the town. It is supposed that in the High Street there are remains of his "palace," but apparently there is no evidence to support the popular belief. His Majesty never remained more than a few days in the town, and was not likely to go to the expense of building a palace for transient visits. The house which is supposed to mark the site is about to be removed in order to erect new buildings, and a faint appeal has been heard against the barbarism. But there are so many buildings in and near London which possess an imaginary antiquity, that one like King JOHN'S palace may be removed without loss. A substitute can be created, if not in Kingston, at least in one of the neighbouring towns.

A "SAFE DEPOSIT" in Chancery Lane has been opened by Mr. THOMAS CLARKE, who is the fortunate possessor of 75,000 superficial feet of property in that important thoroughfare. The approaches and vestibules have nothing sepulchral about them, as they are lined with rich marbles and mosaics by Messrs. BURKE & Co. The writing-rooms are as pleasant as Japanese paper can make them. The strong rooms have been constructed by Messrs. MILNER, and weigh no less than 500 tons. They are divided into compartments, and the key of the renter as well as the key of the custodian will be required before one of them can be entered to remove the contents. The rooms are fully isolated, in order to admit of patrolling along the upper and lower parts as well as the sides. By an ingenious arrangement, the doors of the rooms cannot be opened unless at stipulated times. The position of the "safe deposit" has been well chosen, and there is no doubt it will prove a great public advantage.

IN the competition for the Lowestoft Cemetery Buildings the first prize has been awarded to Mr. WILLIAM DOUBLEDAY, of Birmingham, who has been instructed to obtain tenders with the least possible delay. Messrs. BELLAMY & HARDY, of Lincoln, have obtained the second prize. There were forty competitors. In the competition for the Wesley Chapel at Preston, the design of Mr. DAVID GRANT, of that town, has been adopted. The works are to be at once undertaken.

A RETURN has been published from which it appears that the cost of the Municipal Buildings at Leeds has been 105,164*l.* 6*s.* 10½*d.* From that sum must be deducted the cost of the site, which was 8,890*l.* If we take the items in round numbers, we shall find the following proportions:—Foundations, 6½ per cent.; superstructure, 60 per cent.; tiling, 4½ per cent.; heating, 4 per cent.; furniture, 8½ per cent.; architect, 4½ per cent.; clerk of works, 1½ per cent.; painting, 1½ per cent. The printing cost 350*l.*, while the lightning conductors amounted to only 75*l.*

TRAMWAY engines are so hideous, it is not surprising that a line of tramway is not always supposed to enhance the value of property in streets through which they run. The cable system was recommended in a paper read at the Society of Engineers on Monday, on the ground that it had proved itself possessed of a great many advantages over all other tramway motors, more particularly that no space in the street is occupied by the motor, whereas considerable space is taken up by horses or engines; and also in its power to accommodate sudden and great rushes of traffic, as no other system can possibly do; thus being the best caterer to the public, with a minimum obstruction to them, important points which cannot fail to claim public support.













From the original

*The Arts: The Goldsmith.*  
By M. F. Schumann.



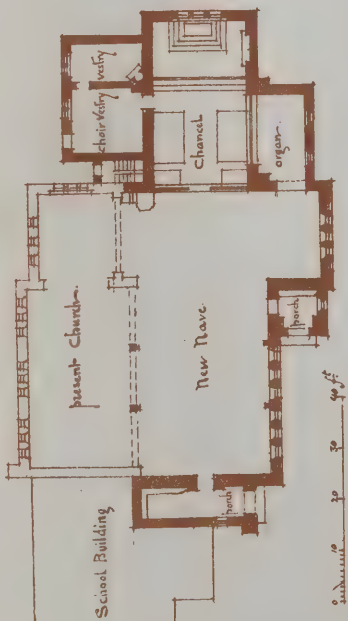








Saint James's Church Haydock.  
Lancashire.  
Design for Enlargement  
New Nave Chancel etc  
George Smith. A.R.I.B.A. Architect. Chester.







PROPOSED HOUSE  
BECKENHAM PARK.  
G. COOPER, ARCHT









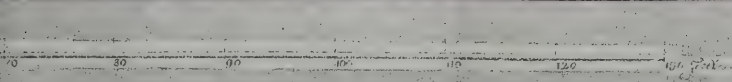
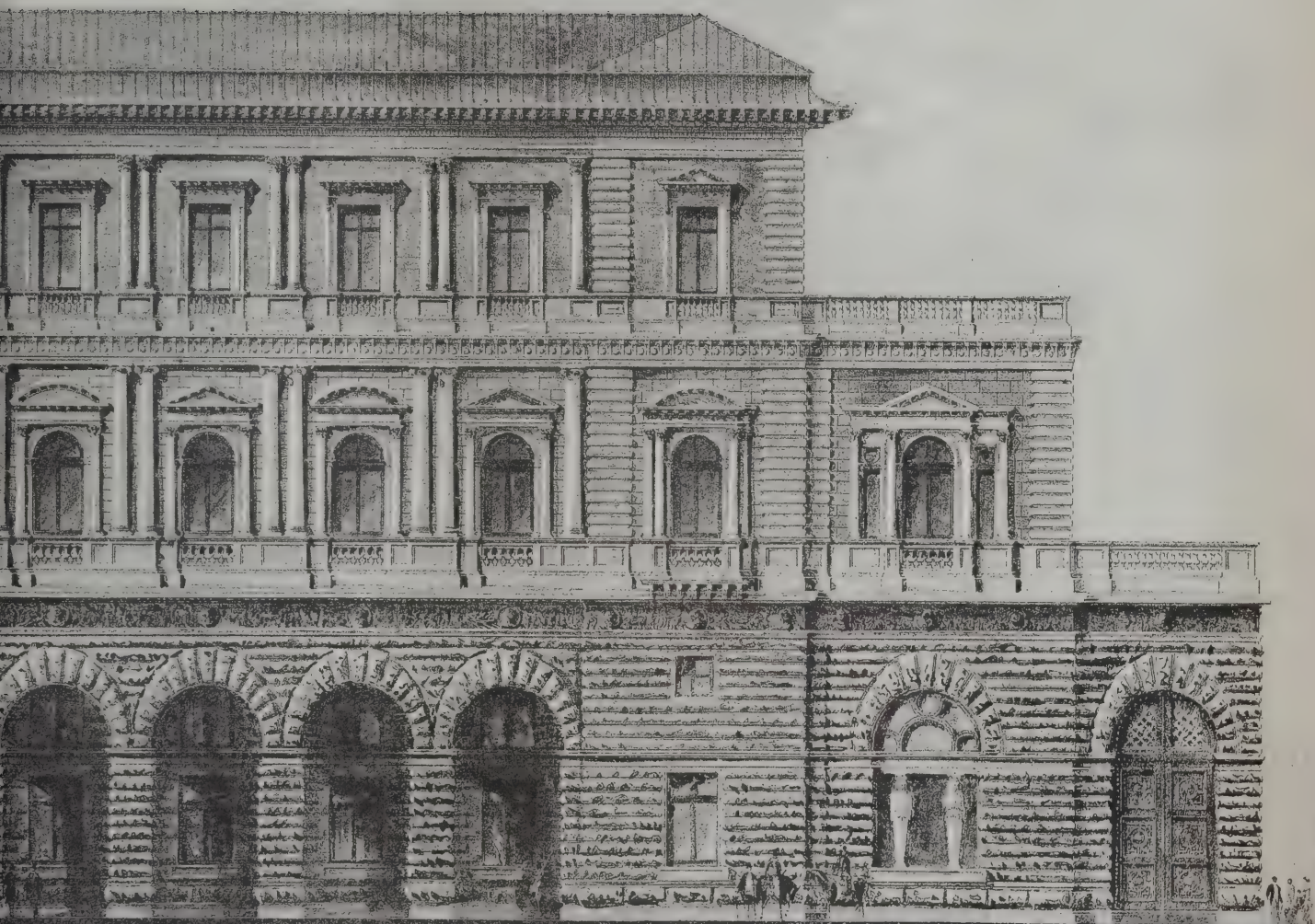




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JAMES EMBANKMENT.

CHITECT.







## ILLUSTRATIONS.

THE ARTS: THE GOLDSMITH AND METAL-WORKER.

WE publish this week one of the figures by M. EHRLMANN which he has designed as types of fine and industrial arts. The series has been recognised in France as among the best of the class. In this case much has been made of personal ornaments, and, if a comparison is made with some of the single figures in the Academy, which depend for much of their effect upon garish and commonplace trinkets, the advantages of the French system, by which jewellery is made an art, will be apparent.

DESIGN FOR A ROYAL MINT.

THIS illustration has been taken from a large water-colour drawing by Mr. FREDERICK SANG, which was exhibited last year at the Royal Academy. It shows the Royal Mint on a new site, namely, the Thames Embankment. It was the designer's aim to express strength, endurance, and security, and accordingly recourse was had to Florence for inspiration. To what extent he has succeeded he leaves the authorities and the public to decide.

ST. JAMES'S CHURCH, HAYDOCK, LANCASHIRE.

THIS design was prepared as an enlargement to the existing church at Haydock. It having been decided to retain the present building, it became necessary to plan the new part so that it would fit and work in with the old church. To do this it was proposed to take down the side wall, and to carry the roofs by means of a timber beam supported by wood pillars and brackets. In consequence of this arrangement, the height of the new nave was determined by the old structure, and there being no clerestory, or possibility of getting light at the west end, the side dormers were introduced so as to allow of larger windows to light the nave, &c.

A new site having been generously presented by the owner of the township, Mr. LEIGH, M.P., it has now been decided to abandon the idea of enlargement, and to erect a new church, for which plans are now being prepared by the author of the design illustrated, Mr. GEORGE SMITH, A.R.I.B.A., of Chester.

HOUSE, BECKENHAM PARK, KENT.

THIS house is being erected in a prominent position, and approached from a lodge, in the above park. The back elevation faces the large cricket and lawn-tennis ground. It is being built with red bricks and stone dressings. The roof will be boarded, felted, and covered with Broseley tiles. The verandah and balcony is designed to overlook the grounds and other very fine views. The architect of the building is Mr. GEORGE COOPER, of Beckenham.

## THE ARCHITECTURAL ASSOCIATION.

THE thirteenth ordinary meeting of the Association was held on Friday evening, the 24th ult., Mr. Cole A. Adams, president, in the chair.

On the proposition of Mr. H. H. Stannus, seconded by Mr. H. D. Appleton, a vote of thanks was awarded to the Entertainment Sub-committee in connection with the soirée. The list of nominations for the ensuing session was then read, Mr. R. C. Pink being nominated as president, and Mr. J. A. Gotch and Mr. W. H. Atkin Berry as vice-presidents.

A lecture was then delivered by Professor T. Roger Smith under the title of

## A Prism for Architecture.

Professor ROGER SMITH developed his subject under seven categories or heads, four of which, viz., floors, walls, roofs and openings, were essentials of buildings, the other three, columns, mouldings and sculpture, being optional. In speaking of floors, he described the old Roman plans as grand and complicated, that they were a people who had enjoyed great constructional opportunities, and that Christian architecture at first had largely depended on what the Romans had done. The first departure made by Christian architecture in the west from old lines was seen in the introduction of monastic buildings, though no startling innovation became apparent till the period of the Renaissance. While on the subject of floors

Professor Smith said it sometimes happened a building would be met with that had been two different buildings in different stages of its existence. Lately he had visited Malvern Abbey Church, once an enormous church, the Norman arcade of which still remained. Originally no doubt a low building, it had been altered, not in plan, but in height, which had been added to, and the impression produced now was one of height rather than extent, though there was no difference in the dimensions of the building. Ornament could not, to any large extent, be applied to floors. The grandest were to be found among the Roman mosaic floors and the tile pavements, sometimes very magnificent, of the Middle Ages. Westminster Abbey was possessed of one of Alexandrine mosaic on a very grand scale. The art of planning, as it was at the bottom physically, so also was morally at the root of all building.

Walls formed the second feature. The object of walls was threefold, viz., to enclose the floor, to carry the roof, and to form an object to be looked at from the outside and the inside of the building. Though the circumstances of plan determined the shape of the wall, whether it should be straight or curved, the outline was optional as regarded simplicity or complexity. Height, outline, and thickness were also optional, and the comparison of different buildings as to these points was interesting. The most handsome of all would be perhaps what we called the sky-line. In early times it was straight. The general outline of the Egyptian temples varied by the proportions given to the pylons. Among the Assyrians the outline, as far as was known, was straight, but in Greece a very remarkable innovation occurred in the pediment or gable, one of the most interesting features of the wall of a building, which once introduced was never abandoned, though varied in outline, sometimes flatter, sometimes steeper. In connection with the wall came the tower, mainly a Christian introduction. There were great towerlike buildings in Assyria, but the Egyptians had apparently not cared for the tower. It next developed into the turret, a feature such as was common in German churches, and the slender turret or minaret peculiar to Mohammedan buildings. In regard to the thickness of walls, as skill became greater, walls became slighter. An essential consideration in the construction of a wall was the foundation. It was the starting-point of every wall, and should receive the utmost possible attention. Any mistake made would tell afterwards, and at a time when to remedy it would be nearly impossible. The structure of walls varied immensely, as they had to be built of materials ready to hand. A wall consumed so much material, and the expense was so great if materials had to be brought far, that, as a general rule, materials within reach had been used, and so geology had dictated to a large extent the composition. In clay districts, bricks were used; failing clay, earth had been used, also flints—all which were abandoned for stone. The old Romans had employed artificial materials as bond, and wherever they could get stones the size of potatoes they could build. Brickwork went greatly out of use in the Middle Ages, especially in France. Its retention was mostly found in Italy, while the Gothic builders generally made use of stone. Then there was the construction of walls by combination of different materials, and to a large extent walls had been faced with materials more precious, or more specious looking, than that which formed the heart. As a rule, this construction was done very cleverly, but sometimes with such want of skill that it led to the ruin of the wall. But it was hard to find any wall that was of the same material all the way through. A wall comprised three divisions—base, body, and top. In the Greek temples the top would be an overhanging cornice. Bases were sometimes omitted, but a wall was seldom found without showing some indication of the base and marking of the top. A novelty to be noticed in Mediæval buildings was the buttress. The art of throwing the wall into piers inside was well understood of old, but the Gothic builders introduced a new constructional feature by throwing it on the buttress outside. Magnificent effects were got by shadow, and this was one reason why in all northern regions where the sun was lower the buttress once introduced was cherished and had flourished. In considering the roof, Professor Roger Smith said that in hot climates a flat roof was almost a necessity to allow people to get upon the roof. One reason for the gable in Greece was probably because the climate there was sufficiently temperate for people not to care about getting on the roof. Pitch of roof was influenced by the presence or absence of bad weather. Where there was much snow or rain the pitch was generally made steep, with a view to throw off the snow, &c. This principle became complicated in countries where, besides a considerable amount of snow and storm, the sun at certain seasons had great power. Switzerland was a case in point, and the roofs were comparatively flat, with great overhanging eaves to keep the house cool and provide shade, and moreover an important architectural effect was got by the shadows. Lastly, the roof-covering influenced the pitch, and therefore economy was generally the principal factor in determining it. The highest external development of the roof was the tower, and Mr. Smith alluded to the magnificent spire of Lichfield



Cathedral as an instance of the external roof in its glory. He also called attention to a cluster of German high-pitched roofs and a pair of curious towers at Angoulême, the roof of Westminster Hall, &c. Then an entirely new system of roofs was met in the permanent roof, leading to a series of developments in vaulting. In the Middle Ages the vault had been developed through a series of wonderful transformations till it reached its acmé in that of Henry VII.'s chapel at Westminster, and at King's College. Out of this grew another form of roof—the dome—the history of which was interesting to trace from old Rome to Byzantium to the greatest development at St. Sophia, in Constantinople. Western Christian architecture neglected the dome, and down to the time of the Reformation there was hardly any important Christian dome except that of Sta. Maria dei Fiori, at Florence. With the Renaissance the dome came more in use. Of those constructed, St. Peter's at Rome was the largest, and that of St. Paul's incomparably the finest. Mr. Smith alluded to the exquisitely beautiful Pointed Saracenic domes, both original and rich in design, and then pointed out the endless varieties of ceiling-work, all of which came under the head of roofing.

The fourth essential of building was the openings, which were to a building very much what features were to a human being. They were the inlets of impressions from without, and the outlets of expressions from within. The openings acted like features in giving architectural expression to a building. The great difference between trabeated and arcuated building, or, in other words, the difference between the lintel and the arch, came to the front in considering the question of openings as one of the most important developments in architecture. Limitations in regard of size or shape of openings naturally affected architecture. When the Pointed style came in, restrictions as to size or shape were removed. With the introduction of the arch, the whole system of architectural construction was altered, and had there been time it would have been interesting to speak of the great step taken when the arch passed from the hands of the Roman builders to the hands of the Gothic Mediæval builders. The decoration of every Gothic arch was by what Professor Willis had called building the arch in orders, or what might be called a recessed arch. The filling in of openings had led to most magnificent results. The tracery at the east end of Carlisle Cathedral was an example of one of the finest of traceried windows, and which showed perhaps the culmination and decline of this work. Pierced plates of marble of great beauty, grills of woodwork, &c., of simple design but exceedingly beautiful, were examples, among others, of modes of filling openings. The grouping of openings or fenestration became then an important matter, and took the place of grouping of columns.

Those were the four essentials of building. The next three features were optional. In the first place there were columns required for constructional purposes, just as posts were used to carry sheds. Many buildings had no columns, and in many that had them their use would have been dispensed with were it not for their beauty. The columnar style displayed an almost infinite variety, and columns in endless varieties might be picked out by going through all the old buildings. The Greeks grouped the column really under Doric and Ionic, which formed the patterns of nearly every column since. Pointing to the drawing of a Persian column, Mr. Roger Smith showed that the base of that column furnished the idea for the base of columns used in Asia Minor, and over a considerably limited field in various parts of Greece. That column had been the parent of all columns used since. When the arch came into use the column sank from its original position as an integral part of the building. If the Parthenon were robbed of its columns, the architecture would be lost. The Coliseum might be shorn of its pilasters, and would lose nothing. The subsidiary use of columns and the Decorated columns, the use of interior columns, and absence of exterior columns were referred to as new departures in the hands of Gothic builders. Columns were proportioned to the loads they were intended to bear. A main column in Durham Cathedral showed engaged columns about it that apparently had no duty, except that of carrying a moulding. There were nook shafts and vaulting shafts and shafts used with tracery—all examples of Decorated columns. Inside buildings, churches, cathedrals, &c., columns served to do important work, and looked extremely well. One other use of the column was the Roman isolated column for the purpose of a monument. Columns were often necessary and introduced constructionally. Ornaments were not. To pass over colour and colour decoration, ornament might be broadly classed in two groups, viz., mouldings and sculpture. The original *motif* of the moulding was to produce an outline or profile. The Roman cornice not only threw a shadow, but produced a great projection in the building. Secondly, an object attained in Gothic buildings was to throw a line on the building in a similar way as by use of the brush, the shadow being got from the hollow of the moulding. It was most important to design the size of a moulding in relation to its position as nearer or farther from the eye of the beholder. Moreover, the relation of

mouldings to other architectural forms, materials, and dates of buildings was full of interest. A member of the Association in its early days used to say that if put down in the dark in a Somersetshire church he could identify the building by its mouldings, and that was the kind of familiarity they ought to aim at in the great architectural field of work. As to the relation of mouldings to materials, a good surface could not be produced on stone. To get shadow the features must be well defined and bold. In the thirteenth century the mouldings were undercut to a remarkable degree. To go to the other extreme—namely, white marble—the mouldings were comparatively flat, but as good an effect was got from the flat and delicate mouldings in white marble as from the boldest mouldings in stone. Wood as a material did not give so lustrous a surface as marble. The treatment of wood lay midway between that of marble and stone. Constructionally speaking, we built with marble and with stone, but wood we fitted together. Mr. Roger Smith next referred to sculpture, which was sometimes incorporated, sometimes framed, in the architecture, examples of both kinds of treatment being given in Grecian architecture. He also mentioned architectural features formed by caryatides incorporated in buildings, which to a large extent were conventionalised to fit them to the building. He instanced the Erechtheum, and also the modern church of St. Pancras in the metropolis. Conventionalism was the term for expressing the agreement to accept part for the whole. Painters had a conventional representation of the human figure sufficiently suggestive of the figure to satisfy the eye. As to the use of carving for ornament, the Greeks, who were the fountain-head of ornament, took a certain amount from the Assyrians, and whatever they had touched had come down to us almost without exception. Ornament had sprung up and passed away again, but was there any secret to explain the Greek enrichments? Everything they touched became good in their hands, and had lived on to the present time. Mr. Roger Smith then by a sketch on the blackboard showed the principle or secret that produced this excellence, and observed that it was a principle of almost all Greek mouldings that the leading line, or one of the principal leading lines, of the moulding was the profile of the moulding itself. The lecture was concluded by remarks on colour, and after an allusion to ancient works, Mr. Smith said, as to our own Gothic buildings, it was difficult to determine the extent to which colour was used. He believed colour of no great brilliancy was used in many buildings, but then we had had the best of all colour decoration in stained glass, and if our buildings were less brilliantly coloured than others, it was because they were decorated with that beautiful glass which had fallen a victim to its own fragility or to the destructive agents of iconoclasm. He would merely add that no architecture was complete without colour. He had now gone through all the colours of his prism of architecture, and he would only say that if he had referred to something perhaps parallel to the seven lines of the rainbow, that the other lines of the spectrum had been ably treated by the greatest master of architecture in "The Seven Lamps of Architecture."

A vote of thanks, proposed by Mr. Slater and seconded by Mr. Blagrove, having been carried by acclamation, Professor Roger Smith replied, and the proceedings terminated.

## THE RESTORATION OF WESTMINSTER HALL.

THE Select Committee appointed to examine and report on plans for the restoration of the exterior of Westminster Hall have agreed to the following report:—

Your Committee was appointed to "examine and report upon plans for the restoration of the exterior of Westminster Hall." This reference was practically limited to the west side of Westminster Hall, which, by the recent demolition of the Law Courts, has been exposed to view, and to the north front of the Hall.

At the time when your Committee commenced their inquiry the only plans before them were those of Mr. Pearson, R.A., and the evidence received by your Committee has been mainly in opposition to or in support of them, although alternative plans were suggested during the discussion.

The question of the completion of Sir Charles Barry's plans for extending the Houses of Parliament in front of Westminster Hall, and on the site of New Palace Yard, was not in terms referred to your Committee, but, as their inquiry proceeded, it became evident that it would be necessary to consider those designs, as the treatment of the Hall would largely depend upon any conclusions arrived at with reference to them.

Sir Charles Barry proposed to erect two wings to the Houses of Parliament, similar in character and treatment to the existing front of the House of Lords in Old Palace Yard, the one extending from St. Stephen's Porch in front of and parallel to the west side of Westminster Hall, and joining at the north-west



corner of New Palace Yard another wing from the Clock Tower along the south side of Bridge Street. These two wings were to enclose New Palace Yard; at their junction there was to be a lofty and very ornamental gate tower.

The west front of Westminster Hall would be completely concealed from Parliament Square by these buildings, and the Hall would abut upon a court between it and the proposed western wing of the palace. This court was appropriated as a covered place for carriages.

Sir Charles Barry also proposed to raise the roof of Westminster Hall, and to raise the towers on the north front, so as to bring them into direct harmony with his building.

These plans also involved the removal of St. Margaret's Church to a position on the west side of Parliament Square, at a cost of 18,000*l.*, for otherwise the roadway between the new wing and the church as it now stands, would be inconveniently narrowed.

Mr. Charles Barry requested permission to give evidence before your Committee, and proposed a modification of his father's plan, in which this wing is thrown back nearer to Westminster Hall, but this is only to be attained by narrowing very much the courtyard between the wing and the Hall, so as seriously to interfere with the light to the rooms of the new building looking into this court, and by removing one of the flying buttresses, and blocking up two of the windows of the Hall at its southern end.

The cost of Sir Charles Barry's buildings was estimated at over 500,000*l.*

In 1865 the Government of the day, with the approval of Parliament, abandoned all intention of carrying out this scheme.

Money was voted for covering with stone the lower part of the western face of the clock tower, which had been left in brick by Sir Charles Barry, with a view to this scheme, and for surrounding New Palace Yard with the present elaborate railings.

It has been suggested by Mr. Ayrton that this abandonment did not apply to the whole scheme, and that it would be desirable to carry out so much of it as involves the erection of the wing in front of the west side of Westminster Hall. He admits that there is no present need connected with the Houses of Parliament or the public service for such a building; but he would not advise the construction of any work which is inconsistent with the future completion of it. He considers that Westminster Hall, as now disclosed to view, is "merely a gigantic barn, and a perfect eyesore in connection with and relative to the Houses of Parliament," and that it would be desirable to conceal it from view by the erection of a building in front of it.

This view is not that of several eminent architects who have been examined before your Committee, and who have expressed the opinion that the grand and severe lines of Westminster Hall combine well with the more florid work of Sir Charles Barry; and that it would be a grave mistake to erect any building in front of it so as to shut it out from view.

No attempt has been made to show any necessity for such large additional accommodation as would be provided by Sir C. Barry's plans, and the evidence before us of the chairman and of Mr. Ayrton points in the contrary direction. The chairman stated that, according to his view, there was no very serious demand for fresh accommodation in the Houses of Parliament which could not be met by rearrangement of the rooms already existing under the roof of the House.

Upon the whole, then, your Committee have arrived at the conclusion that neither architectural consideration for the group of buildings as they now stand, nor utilitarian reasons connected with the wants of Parliament, or of the public service, require that Sir C. Barry's wings, or either of them, should be erected.

A great deal of very interesting evidence has been brought before your Committee as to the condition of the west side of Westminster Hall at different periods, and as to the relative position of the buildings which undoubtedly adjoined it. This evidence was, as might be expected, conflicting upon many points, but your Committee do not think it necessary to dwell upon it, as so much of it bears but indirectly upon the questions referred to them.

Your Committee are, however, satisfied upon three points which are of importance in considering the question of the restoration of this side of the Hall.

1. That the Hall was intended by the original builders to be seen, although buildings of different heights soon sprung up beside it.

2. That at some time, probably, as your Committee think, in the reign of Richard II., a two-storeyed building was erected, underneath the flying buttresses, along the whole length of the Hall, with the exception of the two northernmost bays, the flying buttresses being built at the same time to support the splendid wooden roof then erected.

3. That at the north-western end of the Hall, facing New Palace Yard, a building stood at right angles to it, erected in the time of Henry III., and subsequently modified in Tudor

times, in the upper part of which was the room long occupied by the Exchequer Court.

Your Committee are further agreed that it is most desirable to preserve the ancient Norman work, erected in the time of William Rufus, on the lower part of the western wall. The stones are in perfect condition, and are covered with marks and signs of the Norman masons of that date; and as this stonework is one of the few specimens of that kind now existing, it should not be left open and exposed to the action of the London atmosphere, by which it would be speedily destroyed.

The perfect preservation of this masonry to the present time has been due to the fact that from the time of Richard II. it was covered over by buildings already referred to, which existed under the flying buttresses, and against the side of the Hall.

The investigations of Mr. Pearson have disclosed the foundations of a gallery or building in this position, extending nearly the whole length of the Hall. The height of the wall of this building is clearly indicated by the returns on the existing buttresses; that the building was double-storeyed appears from many indications, and was admitted by every witness but one before the Committee. The intervening floor and the roof were supported by arches erected on the side of the Norman wall, and resting on the old Norman flat buttresses, while all the extant plans made by Sir Christopher Wren and later architects and archaeologists, show that there were two storeys of rooms in connection with the Hall and the surrounding buildings, of which the upper floor was approached by stairs in the Hall itself. The only matter in doubt as to this building is the number and nature of its windows. Mr. Pearson suggests that in the lower storey there were arches, and that the upper floor was lighted by windows of two lights similar in design to the upper windows of the Hall. He admits, however, that the number and arrangement of them are conjectural on his part.

Turning then to Mr. Pearson's plans, your Committee find that he proposes to construct a double-storeyed gallery under the buttresses, following exactly the lines of the original building, and inserting in it windows which he considers in general harmony with and suited to the present requirements of the building. Finding also extreme difficulty in carrying on the gallery to the north end of the hall, and terminating it in a satisfactory manner, he proposes to erect a building at right angles to the Hall and facing New Palace Yard, in character with the work of Richard II., on the foundations of that previously referred to. He justifies these constructions on grounds architectural, archaeological, and utilitarian; he believes that by adopting them we shall recover the general aspect of the Hall as it was in early days.

He considers that a massive wall connecting the buttresses is necessary as a support to them and to the Hall itself, the western wall of which is not sufficiently strong.

He proposes that the two storeys of the gallery shall be divided each into four rooms; the dimensions of those in the upper storey will be about 40 feet by 20 feet, and 14 feet 6 inches to 17 feet in height, and of those in the lower storey about 38 feet by 19 feet 3 inches, and 13 feet 6 inches in height. It is proposed that the lower part of the building, at right angles to the Hall, on the site of the present shed, shall be used as a stand for horses, and that the upper part of it shall form a large room, communicating with the upper storey of the gallery.

These plans have been strongly opposed by witnesses before your Committee, some of whom represent a distinct school of archaeological opinion. These gentlemen object in principle to any attempt to restore or reconstruct on the lines of buildings which existed in former days. Any additions to or restorations of an old building such as Westminster Hall should, in their opinion, be of a markedly modern character; and, so far from being in harmony with it, should be purposely made incongruous, so as to show distinctly that they are modern work, and not imitation or restoration of what formerly existed.

Much of the evidence of these witnesses has been directed to criticisms of Mr. Pearson's plans, which they consider to be inaccurately described as restorations, on the ground mainly that the form of the windows in the proposed gallery is conjectural. Mr. Pearson has fully admitted this, and also that the building which he proposes at the north-west corner of the Hall is not a reproduction of that erected in the time of Henry III.

These witnesses admit the necessity for erecting under the flying buttresses of the Hall some structure suitable for protecting the old Norman wall from the action of the London atmosphere, but they object to the building being such as to revive or recall the past aspect of the Hall. They think that it should be as distinct and different from the character of the Hall as possible. The solution most favoured by them was, that a gallery should be erected under the buttresses and against the wall, at a distance of only eight feet from it, of wood and plaster, after the style of old buildings in Cheshire and elsewhere, the wood to be painted black and the plaster-



work white. Two rows of square-headed windows, it is proposed, should be inserted in this structure. No use is to be required of it further than to preserve the face of the wall.

This alternative treatment of the Hall has been condemned in the most emphatic manner by the eminent architects already referred to, who concur generally in the proposals of Mr. Pearson. Some difference of opinion existed among them as to whether the building under the buttresses should be of the height suggested by him. Mr. Waterhouse stated his strong preference for a lower building, on the ground that it would leave open to view more of the upper part of the wall and its range of windows, and also the upper parts of the flying buttresses; and Mr. Christian appeared to incline to the same view, though he admitted that the question of taste was evenly balanced.

At the suggestion of the Committee, Mr. Pearson made an alternative design for a lower building, showing more of the buttresses, and models of both plans in canvas have been erected on the side of the Hall itself, each showing two bays, with the galleries and buttresses as proposed. Both Mr. Waterhouse and Mr. Christian, on seeing these models, desired to be recalled before the Committee, and expressed a confident opinion that Mr. Pearson's original plan was the best, for the reason that it gives greater dignity to the side of the Hall than the lower building, while it leaves open to view from a distance more than they expected of the upper line of windows and of the flying buttresses. Mr. Pearson has also strongly expressed his preference for his first designs. It is to be observed that in the alternative plan the lower storey is necessarily reduced to a mere cellar, eight feet only in height.

Your Committee, after careful consideration of the evidence and of the models of the buildings erected on the side of the Hall, are of opinion that Mr. Pearson's original design for a two-storeyed building under the flying buttresses should be carried out. Considering, however, the desirability of obtaining, consistently with the adoption of this original plan, a fuller view of the windows of Richard II. and of the arches of the flying buttresses, your Committee suggest for consideration that the wall of the two-storeyed building should be somewhat lowered, and that a plain coping should be substituted for the battlemented parapet. There is, they may observe, no direct evidence that the original wall had parapets, though in the opinion of Mr. Pearson and others, the evidence points in that direction. A slight modification of this kind would certainly bring the windows of Richard II. considerably more into view, and would not, so far as your Committee can judge, injure or detract from the general effect of the building. Mr. Pearson has submitted to your Committee a drawing showing the arches in the lower gallery, with traceried windows, recessed from the plane of the wall. Your Committee approve of this suggestion.

The upper gallery of the building under the buttresses may be divided into four large rooms of sufficient height, approached by steps in the corners of the Hall, or from the lower gallery. These rooms will be conveniently situate for conference rooms or deputation rooms for members, or would be equally useful for Royal Commissions. The lower storey may also be divided into rooms, or may be left as a gallery where the Norman walls would be open for examination by those interested in archæology.

Your Committee also, in view of the opinion expressed by Mr. Pearson, that the proposed building at the north end of the Hall will form a fitting termination towards New Palace Yard of the gallery between the buttresses, and also of the favourable opinions expressed by some of the principal architects examined, are prepared to approve of it. Such a building can be fully justified on utilitarian grounds, as it will supply an indispensable need of the House in a stand for horses and other purposes, in place of the present shed. It has been represented to your Committee that it would be most difficult to provide for these wants in any other way that would be satisfactory. The large room in the upper part of this building may be used in connection with the gallery under the buttresses; as it is proposed to be lighted by windows on three sides, your Committee cannot doubt that the difficulty which has been suggested, that effluvia from the stand below would limit its use, may be easily overcome.

Your Committee have considered the proposal of Mr. Pearson to remodel and raise the towers at the north front of the Hall. It is admitted by Mr. Pearson that these alterations "cannot be based upon any reference to history or past record, but are almost demanded by the extreme ungainliness of the existing front," which, he adds, "has an air of spuriousness." Some of the witnesses considered it very desirable that Mr. Pearson's proposal should be adopted; others, while much admiring the design, did not apparently attach much importance to this alteration; while others were decidedly opposed to it. Upon the whole, then, looking to the conflicting nature of the evidence, and to the fact that the raising of these towers is not an essential part of the scheme, your Committee are of opinion that it would be well to postpone any decision upon

this part of Mr. Pearson's designs until the effect of the proposed building at right angles to the Hall, both in respect of the existing towers and of the west side of the Hall itself, can be fully tested.

It remains only for your Committee to point out the cost of these various constructions.

The total estimate of the works by Mr. Pearson is 35,300*l.*; of this 5,000*l.* is the cost of completing the corner of St. Stephen's Porch, in harmony with Sir Charles Barry's work. This is indispensably necessary if it be determined not to construct the wing of the Palace in front of the Hall, as proposed by Sir Charles Barry.

Eight thousand pounds is the cost of rebuilding and repairing the flying buttresses, and of effecting necessary repairs to the western wall of the Hall; this also is absolutely necessary, whatever plan is adopted.

Eight thousand eight hundred pounds is the estimate for raising the two towers on the north front, as proposed by Mr. Pearson; but this estimate may for the present be left out of consideration, if the work on these towers is postponed, as above recommended.

There remains 13,500*l.* as the cost of the two-storeyed gallery under the cloisters and the buildings at right angles to the Hall, and for which, looking at the question from a merely utilitarian point of view, there will be obtained a number of excellent rooms available for the purposes above referred to.

Your Committee consider it desirable that the date, or some other distinctive mark, should be placed on certain of the stones, so as to prevent any misapprehension arising hereafter as to the date of the work.

Your Committee, in conclusion, desire to express their sense of the great care and knowledge exhibited in his treatment of this most difficult subject by Mr. Pearson, who is admitted to be a most competent authority for such works, and whose plans are supported by some of the most eminent architects of the day; and while, on the one hand, your Committee do not contend that his design is an exact reproduction or restoration of the west side of the Hall, on the other hand, they feel assured that it has been prepared with careful regard to all historical evidence, and that the general scope of his design is in harmony with the simple grandeur of this national building.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### THE NEW ARCHITECTURAL ROOM OF 1837.

ON April 29, 1837, His Majesty William IV. opened the rooms in the National Gallery, Trafalgar Square, which had been assigned to the Royal Academy. They were distinguished by the names *East Room*, *Middle Room*, *West Room*, *Drawings and Miniatures*, and *Architecture*. Sculpture was in the room on the ground floor, but, bad as it was, it was superior to the closet in Somerset House where the exhibitions of the Royal Academy had been held from 1780. The architectural drawings were criticised by Mr. W. H. Leeds, in an article which we consider to be worth reprinting at a time when architecture has again changed its quarters, and become the occupier of a new room in the premises of the Academy:—

Just returned from the Academy's exhibition, which, as far as the architectural drawings are concerned, is altogether the very worst I have yet seen during the whole course of the time I have been in the habit of visiting it; that is, for the last sixteen years. One might almost imagine it to be the intention of the Academy to throw architecture overboard altogether, by bringing it into disgrace, and disgusting the public with such specimens of it. Elsewhere are the miserable things we this year meet with—I will not say hung up so as to be thrust just before our eyes, but wherefore are they admitted at all? It will be said, it is not the fault of the Academy if better designs are not sent in. Undoubtedly it is not; yet, although it does not possess such authority as will compel architects to offer good drawings, it certainly has the power of rejecting bad ones; and, that power being possessed, it might be conceived that policy alone, to say nothing of decency, would induce the judges to exert it in a case like the present. Is it, I would ask, by receiving any rubbish, so long as a vacant space can be found on the walls to hang it up, that the Academy either consults its own dignity or discharges its duty? Does it conceive that it encourages art, or does it in any degree attend to its interest by admitting, and thereby countenancing, works of sheer imbecility? So far from adopting such a degree of judicious severity as would render it in some respect honourable, at least creditable, to have a work received into the



exhibition, the Academy has this year virtually proclaimed that nothing (in architecture, I mean, for it is of that alone I am speaking) can be too vile, or too preposterously absurd, for acceptance. Or is it to be imagined that, whatever may be the case with regard to paintings, works of architecture are considered as out of the pale of the Academy's jurisdiction, and that it is no one's business to sit in judgment beforehand on the architectural designs, and to weed out from among them, at any rate, such as are absolutely disgraceful. If this be any excuse, the Academy is perfectly welcome to it; though, in itself, it is nothing short of damnatory, as it cannot be made use of without convicting that body of being, as far as concerns one of the fine arts it is intended to promote, not only useless but positively mischievous.

This language runs the risk of being deemed too fiercely severe. Beforehand, I grant it may seem to be so; but it will not be thought more than just by any one who has looked at those two architectural abominations, Nos. 1006 and 1054. In one word, it is a downright insult, both to the architectural profession and to the public, to hang up such truly infamous performances. Truly, the Academy has opened its new exhibition rooms with works of most propitious augury for architecture, and most creditable to the present state of that art in this country! The only comfort left us is, that the very enormity itself will tend to bring about some reform, by exciting such strong, if not general, animadversion as may induce the Academy to show henceforth a little more discretion and decency. If the Royal Academy has no regard whatever either for the interests or the honour of architecture, why do not our architects emancipate themselves from it altogether? Why does not the Institute, if it be really anxious to vindicate the dignity of the art itself, and to promote a right feeling for it among the public (as it is obviously for the direct interest of the profession itself to do), establish an annual exhibition of its own; not one that is merely the fag end, as it were, of an exhibition of pictures, but which should be on an independent and adequate footing? which should, besides, consist of something more than picture-drawings and elevations, and wherein some kind of classification, both as regards the style of execution and the subjects themselves, should be observed? But *revenons à nos moutons*.

A very cursory examination of No. 1038, *Design for the New Houses of Parliament*, by L. N. Cottingham, will convince any one that the charge which has been brought against Mr. Barry, of having pirated from it, is most preposterous, unless he has discovered the philosopher's stone, and the art of transmuting architectural lead into gold, tastlessness into beauty. The most that can be said in its favour is that it is not altogether such an extravaganza as Gandy's *British Legislative Mansions*, No. 1035. Although with no pretensions to architectural importance (it consisting of no more than a few piers and railings), No. 1044, *Design for the Entrance to the Old or Royal Well Walk, Cheltenham*, now erecting, &c., by T. Bellamy, is one of the most pleasing and tasteful things in the room; and it proves that, if an artist possess real talent, he will make it display itself, let the subject itself seem ever so unpromising; while, on the other hand, there are many who aim at the most ambitious fancies—huge national buildings, &c.—yet, at the same time, plainly show they possess neither the invention nor the ability to design a door or window. In this latter class we may fairly put down Mr. Vulliamy (would that we could as easily put down the whole of the class itself!), who exhibits to us, in No. 1119, the *Proposed new Front for the Royal Institution*. Now, although the building in Albemarle Street is at present of the most homespun description, it has, at least, the negative merit of not being ridiculous, which it certainly would become, and not a little offensive withal, should it ever be improved according to Mr. Vulliamy's recipe. There are three ranges of windows, thirteen on a floor; consequently, unless the whole front were to be entirely remodelled, these numerous apertures must determine its character, and, if they cannot be got rid of, ought to be rendered attractive as well as indispensable features. Yet what does Mr. Vulliamy propose to do? By what happy stroke of invention does he think to transform this dowdy in brick and mortar into a piece of Grecian architecture? Why, by sticking up fourteen Corinthian columns against the piers! Really, if we cannot get beyond such vile sophistications and adulterations, such extravagant dulness, we ought either to go to school afresh, or else abandon Grecian and Roman architecture altogether. At any rate, should the Royal Institution accede to this architectural proposal, it will deserve to be formally anathematised by the Institute. One thing is quite certain, that Mr. Vulliamy has not the fear of Welby Pugin before his eyes.

The designs by the new professor of architecture (viz. 1014, 1016, 1022, for a *Metropolitan Hospital*, and 1034, a *Triumphal Entrance to the Horse Guards*) do not rise above respectability: they are pleasing, but display no extraordinary taste, still less any power of imagination. Gandy, on the other hand, possesses a superabundance of imagination, yet of the most ill-regulated sort, and almost, in fact, to the exclusion of

common sense. Were he and Mr. Vulliamy to bite each other, it might prove greatly to the advantage of both; for the one would probably be chilled into propriety, the other kindled into some degree of fancy.

No. 1005, an *Interior View of the Arcade beneath the Viaduct of the Westminster and Greenwich Railway*, by D. Paine (of which, by-the-by, there was a lithograph engraving published some time back), manifests much greater taste and propriety, and cleverness of application, than many subjects which seem to afford far greater scope for design. There is likewise a good deal of effect in the drawing itself, which is more than can be affirmed of the generality of those exhibited this year; for many of the designs are very poor indeed in their drawing and wretched in their colouring. Sections are prohibited, very properly so, it is to be presumed, as being absolutely unintelligible to the multitude, and altogether superfluous and uninteresting to architects; and interiors might as well be in the same predicament; for, except a few views from old churches, and buildings of that description, there are not above two works of that class in the room—namely, designs for a synagogue. Stay, there is a third, which, the catalogue informs us, is a staircase for a royal palace; but it is placed where it would require another staircase, or at least a ladder, to mount to it, in order to make out what it is. Perhaps we lose nothing by its being so elevated, while the catalogue is a gainer by its being received, along with many other things of the *nos numeri sumus* class, this year a tolerably numerous one. Really, the Academy still requires to have another professorship, and it should appoint a professor of hanging against next season. Of the two designs just mentioned, both of which, it may be presumed, were for the same purpose, No. 1051, *View of the Ark of the new Synagogue in Great St. Helens*, by J. Davies, is decidedly better than No. 1125, *Design for the Interior of a Synagogue*, by D. Mocatta, and that, too, both as regards the drawing itself and the architectural composition. It is, indeed, coloured in a very clever and picture-like manner, more so than almost anything in the room; and there is so much brilliant and scenic effect in the general arrangement, and some of the ideas, that we cannot help feeling pleased with it, though it is not so well studied in all its parts as it might have been; for, taking the features separately, there are some which by no means evince either a correct or an elegant taste.

Among designs adopted for execution, that by Mr. Basevi (1069), for the front of the Fitzwilliam Museum, at Cambridge, towards Trumpington Street, deserves attention, were it only for the importance of the subject. Although it cannot lay claim to any striking originality, it is a very fair composition, consisting of an octostyle Roman Corinthian portico, with three open intercolumns adjoining it on each side, where it projects beyond the general mass of the edifice, similarly to the Royal Institution at Manchester. The façade is completed by a single inter-pilaster at each extremity. The whole, consequently, consists very nearly of columns disposed upon two lines; a mode which not only produces greater richness, but is a deviation from the ordinary one, of placing a portico against a building. The absence of windows will also give a Classical character to this façade: yet it may be questioned whether it will show itself to the same advantage as in the drawing; because, as it will face the east, the whole will be in shade during the greater part of the day, and much of the effect here given to it must be lost. Surely, the architect might have contrived to admit light into the portico, either from above or on the west side, so as to obtain some degree of brilliancy in the centre, where the columns would have relieved themselves against a light background—that is, an open vestibule, so lighted, seen beyond them. No. 1096, one of the four designs selected by the University of Cambridge for the Fitzwilliam Museum, by E. Lapidge, a name quite new to me, has considerable merit; and, owing to the statues and sculpture introduced in it, announces itself more distinctly as a public museum. It has also a dome, an architectural feature in which Cambridge is at present deficient; but, in itself, it is not of the best form that might have been selected. This design is more extensive than Mr. Basevi's, and is apparently intended to occupy the entire length from north to south; whereas the other seems a centre, to which wings may afterwards be added. Whether it was this circumstance which occasioned the final decision in its favour, it is hardly possible even to conjecture, there being neither plan nor sections of any kind, from which we might judge which architect has shown greater taste and judgment in the interior. In this respect, it is to be hoped, Mr. Basevi's design will, when executed, be found perfectly satisfactory. *Ad interim*, such hope ought to be tempered with a little mistrust, it being more prudent, in all cases, not to suffer one's expectations to be over-sanguine.

Again, I am tempted to ask, Why do not either the Institute, or the architectural profession as a body, emancipate themselves from the leading-strings of such a cross-grained dry-nurse as the Royal Academy shows itself to be towards them; shake off the arbitrary and whimsical restrictions it



imposes upon them; and establish such an annual exhibition as would do them credit? Are they so totally devoid of all spirit of independence as to be content to jog upon a pillion behind the painters? Or does it arise from pusillanimity and a cowardly mistrust? As a mere speculation, such an exhibition might probably not answer; at least, it might be some years before it would even pay its own expenses. What then? Has art no more generous speculations? Is it not only to attempt nothing save what promises to be a profitable ready-money concern, but ought no sacrifice whatever to be made for the sake of promoting its interests?

Leaving those whom it may at all concern, either to answer, or, if they cannot answer, to ruminate upon the above queries, I will proceed with my examination, or, rather, now hasten to terminate it, by pointing out one or two more drawings, that prevent the Academy's architectural room being this year a mere blank: I might say worse than a blank, since the bare walls would hardly be so discouraging a sight as most of the things now hung up upon them. Nos. 1093 and 1111, the *North Lodge at Chequer's Court, Bucks.*, the seat of Sir Robert Frankland Russell, by E. B. Lamb, show that *con amore* taste and feeling which give vent to, and find scope for, themselves in the most limited subject. So-called picturesque cottages are, for the most part, equally abominations to the painter and the architect; but the one here represented is particularly happy, and not least of all so for the effect produced by the variety of materials and their colours, as well as for the expression of form. No. 1118, the *Red Maid's Hospital, Bristol*, C. Dyer, is a very good application of the Tudor style. There is also much merit in No. 1133, *A Baronial Mansion in the County of Surrey*, now erecting under the superintendence of B. Ferrey. The gateway tower comes in well in the drawing; and the house itself, which is, like the gateway, of red brick and stone, is of a quiet unostentatious character, with little of embellishment, yet far more pleasing than those overdone attempts at old English architecture where showy, but ill-studied features are put together in such a manner as to betray no feeling whatever for the style itself.

I had hoped that Mr. Cockerell would have allowed us to see something of the buildings he is about to erect at Cambridge; but he has not a single drawing this year; neither is there anything by Barry, and many others who have hitherto generally exhibited; nor has any one ventured to attempt, even upon paper, any specimen of polychromy, notwithstanding that it is a subject which would seem to have engaged the attention of the Institute. In fact, whatever good the Institute itself may be doing, there is not the slightest manifestation of it here; for, as far as design goes, there is this year a most terrible falling-off from the average architectural talent which used to be shown at Somerset House.

### EDINBURGH ARCHITECTURAL ASSOCIATION.

THE members of the Edinburgh Architectural Association on Saturday visited Ravenscraig Castle and Dysart House, the seat of Lord Rosslyn, under the leadership of Mr. John M'Lachlan, architect. On arriving at Sinclartown the company proceeded direct to Ravenscraig, in the immediate neighbourhood, where Mr. M'Lachlan read a paper descriptive of the views, which he illustrated by drawings. Ravenscraig, he said, was one of the most interesting castles in Scotland. It was the project of James II., who, however, did not live to see the work commenced, but it was begun in 1460 under the auspices of his widow, Mary of Gueldres. The castle consisted of two round towers or keeps facing the land, and connected by a curtain of low buildings. It was unassailable from the sea by the perpendicular cliff on which it stood, and was protected on the land side by a deep moat. The battlements were splayed away in solid masonry in a most unusual manner, and there was no sentry walk nor embrasures. The only explanation of that peculiar arrangement he found in the presence of elevated ground landward, which would have rendered futile a defence from battlements in the ordinary way. The besieged would, therefore, rely on the massive strength of the walls, and the sloping battlements would present to the besiegers a surface difficult to injure. After pointing out in detail the architectural features of the ruins Mr. M'Lachlan said it was matter for regret that such a notable, and in some respects unique, castle was rapidly crumbling to decay. It would not, he thought, be out of place if the Architectural Society were to make a respectful representation to the noble owner, the Earl of Rosslyn, to take steps to prevent further disintegration. Their representations regarding Craigmillar Castle had resulted most satisfactorily, and they had good ground for hoping, from the well-known regard which Lord Rosslyn showed for other noble edifices, such as Roslin Chapel, that their action in this case might not be without good fruit. On leaving Ravenscraig, the company walked through

the policy of Dysart House. Here they were met by Mr. Thomson, chamberlain to Lord Rosslyn, and under that gentleman's guidance the party examined the treasures of Dysart House, including a large collection of notable pictures and some beautiful wood furniture. Mr. Thomson afterwards conducted the company to the interesting caves which open off the garden of Dysart House, and thereafter through the most interesting part of the quaint and picturesque town of Dysart. A considerable number of houses of undoubted authenticity, dating from 1560 and 1580, were pointed out. These are of the picturesque character, with crow-stepped gables, broken string courses, and outside stairs. After according a vote of thanks to Mr. Thomson and Mr. M'Lachlan, the party returned to Edinburgh.

At the meeting on Monday, Mr. John Macrae read a paper on "Furniture," in which he referred to the great advance in matters of taste during the last quarter of a century. Education had, he said, made itself felt in every direction, and people now aimed at displaying their taste rather than their wealth in the furnishing of their homes. In keeping with this change of feeling, there had been brought about an entire revolution in the design and manufacture of house furnishings. Speaking of the fashions in furniture, he said the nineteenth century might be called the age of revivals and adaptations. Comparing the factory system with the old style of hand labour, he maintained that more character and better work were secured under the latter. As a manufacturer of furniture he regretted, along with other manufacturers, that the most beautiful woods had for long been excluded from use owing to the prejudice against veneering. His belief was that veneer, when properly placed in panels and protected positions, was not only enduring but beautiful, and in support of this he pointed to existing specimens of Chippendale, Sheraton, and others. Having referred to Talbert's influence, and the desirability of architects and house-furnishers acting in sympathy and co-operation, with the view of securing unity and completeness, Mr. Macrae gave a short sketch of the furniture of the period of Louis XIV. and XV., and concluded with a reference to the latest revival—"Anglo-Moresque." The paper was illustrated by sketches of various kinds of furniture, and at the close Mr. Macrae was awarded a cordial vote of thanks.

### GLASGOW ARCHITECTURAL ASSOCIATION.

THE first of the ordinary monthly meetings was held on Tuesday in the rooms, 114 West Campbell Street, when a paper on "Expression in Architecture" was read by Mr. John Keppie. There was a good attendance of members, and the President occupied the chair. The evolution of historical national styles was considered ere a comparison was drawn between some of these and the present cosmopolitanism exhibited by our modern buildings—a comparison rather unfavourable to the generally received character of steady, thorough-going, and wholly unsentimentalism of the British art public. An interesting discussion, opened by Mr. Boston, followed.

### THE NATIONAL GALLERY.

THE annual report of the Director of the National Gallery to the Treasury for 1884 has been issued. The pictures purchased during the year, it appears, were the following:—*The Assumption of the Virgin*, by Matteo di Giovanni di Bartolo; landscape, *The Calling of Abraham*, by Gaspard Dughet (Poussin); *The Adoration of Magi*, Venetian School; *The Pilgrimage to Canterbury* (after Chaucer), by T. Stothard, R.A.; *On the Ouse, Yorkshire*, by George Arnald, A.R.A.; *View of Harlech Castle, and surrounding Landscape*, by James Ward, R.A.; *Portrait of Miss Fenton, the Actress, as Polly Peachum in the "Beggar's Opera"*, by William Hogarth; *The Shrimp Girl* (sketch), by William Hogarth; *The Crucifixion*, by Antonello da Messina; *Portrait of a Jesuit*, by W. Van der Vliet; and *Portrait (supposed to represent Mary Wollstonecraft)*, by J. Opie, R.A. There were given as donations to the Gallery:—*The Nativity*, by Bernardino Cavallino (presented by Mr. Woodford Pilkington); *The Virgin and Child, with two Saints*, by Bonvicino; *The Procession from Calvary*, by William Blake (presented by Mr. F. T. Palgrave); and *Tartarus*, a satirical design, by James Callot (presented by Miss Appleyard). After giving an account of the pictures and drawings loaned to other institutions, more especially to provincial galleries, the report states that the total number of pictures now contained in the public rooms of the Gallery is about 950, exclusive of water-colour drawings. The report refers to the votes for the two great Blenheim pictures—that of 70,000*l.* for the "Ansidei" *Madonna* by Raphael, and the vote of 17,500*l.* for the equestrian portrait of *Charles I.* by Vandyck. These votes have been agreed to by



Parliament since the report was drawn up, but in view of the question which has been raised in that connection, we quote what the trustees and director of the Gallery have to say on this subject:—"It is confidently hoped that this vote will commend itself to the favourable consideration of Parliament, for although it may represent in its result a less extensive acquisition than the trustees and director originally hoped to secure for the National Gallery, it would be impossible to overrate the importance of adding to the collection two works of such rare value and extraordinary interest as the masterpieces in question. The satisfaction which the trustees and director feel at the prospect of securing those pictures has been somewhat diminished by an official intimation from Her Majesty's Treasury that, in the event of the vote being sanctioned by Parliament, the Lords Commissioners propose to suspend for a certain term of years the annual grant of 10,000*l.* provided for the purchase of pictures. It is respectfully submitted that such a course must be highly injurious to the interests of the Gallery, interrupting, as it would do, the continuity of acquisitions which can only be made from time to time, as favourable opportunities occur, and to defer which would mean to abandon them altogether. The trustees and director therefore take this opportunity of urging their lordships to reconsider a decision which will seriously check the growth of the collection and materially diminish its prospective value." With regard to the permission given to MM. Ad. Braun et Cie., of Dornach and Paris, to prepare a series of photographs from pictures in the National Gallery, it is observed that more than three hundred pictures, belonging respectively to the foreign and British schools of painting, have now been photographed on a large scale with complete success. The advantage thus secured to the public, both in England and on the Continent, of obtaining such admirable reproductions of the works in this collection is immense, and has, it is submitted, amply justified the authorities of the National Gallery in granting a privilege which, for obvious reasons, must be regarded as exceptional. As nearly as can be calculated, the Gallery was visited by 698,489 persons during the year.

In the spring of 1884 the first contract for building works necessary for the extension of the National Gallery was settled, and the foundations were dug shortly afterwards. The basement walls have since been carried up to the ground level, and Her Majesty's Office of Works has invited tenders for the second contract, under which the superstructure will be erected. It is earnestly hoped that no longer delay than is absolutely necessary will occur in the execution of this contract for the completion of the new galleries, which have long been urgently needed, and the necessity for which has been greatly increased by recent acquisitions. The plans for the extension of the building, which have been submitted to and approved by the National Gallery Board, include two new galleries, measuring, respectively, 92 feet by 40 feet, and 87 feet by 40 feet; two cabinets, each 30 feet by 20 feet, and a large staircase which, placed on the central axis of the building, will occupy the site of the present Turner gallery (room No. VI.) and the offices below it. In view of these alterations the large oil-paintings by Turner have been removed from room No. VI. (where, owing to the inadequate size of the skylight, they were never seen satisfactorily) to room No. I., which is far better adapted for the purpose. Of the modern British school pictures hitherto hung in room No. I., the larger ones have been rehung in rooms Nos. II. and III., while those of cabinet size have been temporarily removed into rooms on the ground floor, which, though not built for the exhibition of pictures, are tolerably well lighted and accessible to the public.

Among the foreign pictures *The Jewish Rabbi*, by Rembrandt, has been most often copied. The works which have been next in favour are—*Girl with Apple*, *Head of a Girl*, and *Young Girl Carrying a Lamb*, by Greuze; *Madonna in Prayer*, by Sassoferrato; *Spanish Peasant Boy*, by Murillo; *Ecce Homo* and *Youthful Christ and St. John*, by Guido Reni; and *Ruined Castle*, by Rembrandt. Romney's *Lady Hamilton* is the favourite English picture. The next in succession are Reynolds's *Age of Innocence*, *Heads of Angels*, and *Infant Samuel*; Landseer's *Spaniels* and *Dignity and Impudence*. A considerable number of examples of the British school have been lent under the National Gallery Loan Act to provincial institutions, the list of towns and cities that share in this generosity including Plymouth, Bradford, and Coventry. In all 125 pictures, including several of Turner's, have been sent out to home and provincial galleries, fifteen portraits to the National Portrait Gallery at South Kensington, nine miscellaneous examples to the National Gallery of Ireland, twelve to the Walker Art Gallery of Liverpool, eleven to Manchester, and similar numbers to the corporations of Nottingham, Oldham, Leicester, Stockport, Warrington, Stoke-upon-Trent, Sheffield, Dundee, and Glasgow.

**A Church** is proposed to be built to meet the increased requirements of the populous district of Gillingham, Rochester.

## GLASGOW UNIVERSITY BUILDINGS.

**A** LETTER, which has been addressed by Professor Dickson, of Glasgow University, to Sir Lyon Playfair, on the subject of the Universities (Scotland) Bill now before Parliament, suggests the difficulty of dealing on equitable terms in providing for the conservation of the various university buildings. The Professor says:—

1. The buildings of this university have been erected at the cost of (a) 117,000*l.* obtained from the sale of the Old College site and buildings; (b) 200,000*l.* contributed by the citizens of Glasgow and others (including Lord Bute's great gift); and (c) 120,000*l.* granted by Parliament. It might have been expected, even on the narrowest view of the matter, that the State, which had invested so considerable a sum as 120,000*l.* in the buildings, would, in its own interest, contribute something towards securing their maintenance; and still more that the officials of the State, which had received so noble a gift, would show some slight sense of public gratitude by helping to preserve it. The Commissioners of 1858 and 1876 recommended that the whole charge of the maintenance of the buildings should be undertaken, as regards all the universities, by the Board of Works, on the obvious grounds that the matter is one of public concern, and that it could be most effectively undertaken by those specially conversant with such work. Failing this course, the Commission of 1876 urged that the University of Glasgow should receive an annual grant for the purpose.

2. When on these grounds a formal claim was made on behalf of this university to be at least placed on the same footing as Edinburgh, first in 1876 and then in 1881, it was refused; and the reasons assigned for the refusal were peculiar and remarkable. It was argued that the university, having promised not to claim any further building grant, should hold itself precluded from asking for the same treatment as regards maintenance which the other universities had long received. It was suggested that the State, having given so largely to rear the fabric, should not be expected to take part in upholding it: and that just because the public spirit of the citizens of Glasgow had led them to do so much, it should be importuned to do more. In answer to the argument that the Board of Works had maintained the buildings of the Universities of Aberdeen and St. Andrews, it was suggested that these universities were comparatively small, as if it were a question of size and not of principle, and that "little had been expended on providing them with buildings," as if the expenditure on maintenance should be in the inverse ratio of the original outlay. Whatever may have been the case at Aberdeen and St. Andrews, the new buildings of the United College were provided for entirely by Parliamentary grant. A reference to the case of Edinburgh betrayed a strange misconception of the facts. The grant of 80,000*l.* recently given for the erection of the buildings of the medical department of the University of Edinburgh was set over against the grant of 120,000*l.* for the general building fund here, and it was argued that the University of Glasgow had thus received 40,000*l.* more than Edinburgh. But, apart from the consideration that money given for building could not without breach of faith with the Treasury have been capitalised and applied for maintenance, their lordships either did not know, or chose to ignore, the fact that the main buildings of the University of Edinburgh were erected at the public expense by a succession of grants in the earlier part of the century; that, besides a previous royal grant of 5,000*l.*, the sum of 120,000*l.* was given to Edinburgh by Parliamentary grant between 1815 and 1827, with a supplementary grant in 1831 of 6,000*l.*, making in all 131,000*l.*; and that in reality the latter university has received 211,000*l.* of public money for its buildings instead of 80,000*l.* To this falls to be added the 500*l.* of annual payment to Edinburgh since 1868.

3. Still more unfortunate was their lordships' reference to the state of the general university fund as warranting their refusal to admit a claim for Glasgow which had been long conceded to Edinburgh. Apart altogether from the fact, of which they take no notice, that the amount of the annual Parliamentary vote to Edinburgh (excluding that for maintenance) is 6,104*l.*, while that to Glasgow is only 3,465*l.*, being less even than is given to Aberdeen, the matriculation fees in 1882-83 were, in Edinburgh 3,208*l.*, in Glasgow 2,212*l.*; the graduation fees in the former (mainly derived from medical degrees) were 5,541*l.*, in Glasgow 2,972*l.*; while the amount of interest derivable from capital funds destined to the general university fund in Edinburgh was 1,181*l.*, while in Glasgow it was only 240*l.* To the answer of the University Court, in which their lordships had these arguments fairly put before them, they made no reply beyond a repetition of their refusal. *Stat pro ratione voluntas.*

4. Of course, as trustees, we make some attempt to keep up the buildings. Last year 753*l.* was spent on repairs; but, in order to meet this primary charge, we have to forego or keep down to the lowest level expenditure for other university objects and educational appliances. It may suffice to compare



a couple of heads in Glasgow with the corresponding heads in Edinburgh. The expenses of the Court and Senate in 1882-83 were in Glasgow 371*l.*, in Edinburgh 1,046*l.*; for class assistants and class expenses, over and above those sanctioned by ordinance, the amount in Glasgow was 76*l.*, against a sum in Edinburgh of 1,381*l.*

The simple effect of the bill as it stands is to leave this university charged with the whole of a burden from which the other universities are entirely or in great part relieved; not only to withhold from it what others get, but to compel it to divert towards maintenance of the fabric what the others are free to apply to current educational needs; and so to place it under a permanent disability, as regards means of carrying forward its proper work, of 500*l.* or 700*l.* a year. The very least that should be done in common fairness is to place Glasgow on an equality in this respect with Edinburgh; but the right course would obviously be to give at the rate of the average spent on the others for the last five years.

### JERRY BUILDING IN NEW YORK.

AT a little after 3 P.M. on Monday, April 13, says the *Sanitary Engineer*, a row of eight five-storey houses, situated at the south side of Sixty-second Street, between Tenth and Eleventh Avenues, in New York, and which were nearing completion, fell without a moment's warning, carrying with them a number of workmen estimated to be about forty. These houses were to be of the class that comes between the common tenement-house and the better grade of apartment-house, and were intended for two families on all floors above the first, with stone fronts to the first storey. The ruin was complete—not a cubic foot of masonry above the level of the basement walls being left standing, the appearance of the place reminding one of the havoc of a tornado. The most easterly building is supposed to have given away first, falling outward, the others tumbling consecutively in the same direction as the party-walls fell over, letting the whole into the cellars in an almost inconceivably broken-up mass. Faulty construction and cheap materials used in a rascally manner are without doubt the causes of the disaster. The bricks as they lay, though only a few hours after falling, are sufficiently free from mortar to be at once picked up and relaid; nothing adheres to them. A handful of the stuff with which they were laid can be crumbled to powder by the pressure of the thumb and forefinger.

The basement walls were laid up with the same mud, apparently, that was used in the upper part of the buildings, and the shaly rock, which was removed from the excavations in the neighbourhood in flakes no bigger than the hand, formed the greater portion of these walls. This rock we have a sample of in our office that admits of splitting with the fingers, and small pieces of it can be reduced to powder by the fingers almost as easily as can the so-called mortar.

On Sixty-first Street in the same block, and also at the end of the block facing the Eleventh Avenue, are more buildings apparently of this class, as yet unoccupied, that should at once receive the attention of the Building Department. The buildings on Sixty-first Street are out of plumb, and cracked, the iron columns under the lintel which sustains the front being out of plumb fully one inch in a length of eight feet, the whole end of the houses seeming to have a disposition to settle in the same direction. The wall of the house on the north-east corner of Sixty-first Street and Eleventh Avenue is distorted and bent so as to be hollow four or five inches, and the top corner of the same wall is so far out of plumb as to make it appear to a practical eye that should a line be dropped from the edge of the cornice it would touch the water-table.

### NEW BUILDINGS.

**Redditch.**—The foundation-stones of a new Temperance Hall at Redditch have been laid. The hall will comprise retiring-rooms, cloak-rooms, kitchen, store-rooms, and other out-offices. The buildings will be substantially constructed, with red brick walls, and a solid wood-block floor will be laid for the hall, the roof of which is to be open framed trussed rafters, with match-boarding on the under side, stained and varnished, and forming a coved ceiling. The roofs will be covered with slates, and red ridge-cresting is provided. The front will be a gable, rising to a height of 37 feet, finished with pilasters, panels, moulded brick strings, cornices, ornamental stepped copings, and pediment. The pediment will have an ornamental panel with date, also an inscription stone, "Temperance Hall." A large semicircular window will be placed in this front, and there will also be large double entrance doors, with fanlight over. There are also four three-light windows provided on either side of the hall. A lean-to porch will be fixed over the front main entrance doors, and will be covered

with ornamental tiles. The general design of the building partakes of a Queen Anne character. The hall will be a well-proportioned room, about 70 feet long by 34 feet wide, 13 feet to wall-plate, and 25 feet high to apex of the ceiling. A platform, raised 3 feet 6 inches, will be placed at the northern end of the hall, communicating on either side and on same level with retiring and committee rooms, which have open roofs and are ceiled to underside rafters. There is a front main entrance and two side entrances, all the doors of which open outside to avoid danger in case of panic. The contract, amounting to 860*l.*, is being carried out by Messrs. C. G. Huins & Sons, of Redditch. The building has been designed by and will be carried out under the supervision of Mr. Ernest Day, architect, of Worcester.

### CHURCH BUILDING AND RESTORATION.

**Bulwell.**—A church erected at Quarry Road, Bulwell, has been opened. It is built of Bulwell stone, with Bath stone dressings, and consists of nave, north and south aisles, chancel, vestry, and organ-chamber. The church is seated for 600, and was built by Mr. McCulloch, of Bulwell, from designs by Mr. W. Knight, architect, of Nottingham.

**Kinnerton.**—The church of St. Mary, Kinnerton, in the parish of Old Radnor, has been completely rebuilt, at a cost of 1,500*l.*, and reopened. The church is in the Early English style, and consists of a chancel, nave, organ chamber, vestry, and porch. The walls are of local stone, with internal dressings of Bath and Bromsgrove, and external dressings of Bromsgrove stone. The architect is Mr. T. Nicholson, of Hereford (diocesan architect), and the contractor, Mr. Thomas Collins, of Tewkesbury.

### GENERAL.

**A Picture by Henshaw** has been given to the Birmingham Art Gallery by the daughters of the late Mr. Timothy Kenrick.

**The Picture of "Marat dans sa Baignoire,"** now exhibiting at the Paris Ecole des Beaux-Arts, is declared by the grandson of the painter David to be only a copy. The original, that which hung in the hall of the Convention, he claims to have in his possession.

**The Shakespeare Memorial Window** placed in Stratford-on-Avon parish church by American subscribers was unveiled on Tuesday.

**The Earl of Dartmouth**, on Saturday afternoon, opened the new public swimming baths at Dartmouth Road, Forest Hill, erected by the Baths Commissioners at a cost of 9,000*l.*

**Mr. Sydney Mitchell**, architect, has been commissioned to design the proposed restoration of "The Mercat Cross," Edinburgh.

**The Fund** for restoring the ancient church of St. Bartholomew, in Smithfield, has now reached the sum of 5,000*l.*

**The Bank of England**, it is stated, has purchased for 30,050*l.* the site of the Cock Tavern and the vacant land in Fleet Street between Chancery Lane and the Law Courts, for the erection of new buildings for the accommodation of the large business in connection with the Courts of Justice.

**The Earl of Feversham** has given a site for the erection of a church at Carlton, in the parish of Helmsley, Yorkshire. The structure is to be in the Early English style of architecture, from plans by Mr. Temple Moore, of London.

**The Profits** accruing from the Walsall Corporation Gas-works show a falling off during the past year, and consequently a borough rate, the first for several years, has been imposed.

**Official Accounts** just published of the International Forestry Exhibition, held last year in Edinburgh, show that the total income was 22,957*l.* 9*s.* 8*d.*, and the expenditure 22,665*l.* 1*s.* 8*d.*, leaving a balance of 291*l.* 14*s.*

**Additions and Alterations** to the Railway Servants' Orphanage Buildings, Ashbourne Road, Derby, are to be carried out at a total cost, including heating, cooking, and washing apparatus, of 8,000*l.*

**The Manx Legislature** on Tuesday sanctioned the expenditure of 62,000*l.* on works of harbour improvement at the various insular ports, namely, Douglas—extension of the Queen Victoria Pier by 300 feet, 45,000*l.* Peel—completion of the outer works, as already sanctioned, 2,000*l.*; extension of the break-water, 5,000*l.* Port St. Mary—completion of the pier, as already sanctioned, and extension of the work, 5,300*l.* Castletown—construction of a bridge and works, 4,760*l.*

**"The Canterbury Pilgrims."**—The plate of the *Flych of Bacon* has caused so many additional inquiries to be made for the companion, the *Canterbury Pilgrims*, that we have been induced to arrange for the republication of that plate. It has been long out of print.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MAY 9, 1885.

## EDITORIAL NOTICES.

*The authors of signed articles and papers read in public must necessarily be held responsible for their contents.*

*No communication can be inserted unless authenticated by the name and address of the writer—not in every case for publication, but as a guarantee of good faith.*

*Correspondents are requested as much as possible to make their communications brief. The space we can devote to Correspondence will not usually permit our inserting lengthy communications.*

## TENDERS, ETC.

*As great disappointment is frequently expressed at the non-appearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, 175 Strand, London, W.C., not later than 5 p.m. on Thursdays.*

*Correspondents, when writing to notify an extension of time, or an alteration of the date of sending in Competitions or Contracts, are requested in their letter of advice to write at the head of the required change—“Contract Reporter to THE ARCHITECT.”*

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## LAND IMPROVEMENT WORKS.

The report of the Land Commissioners for England shows that the expenditure up to the end of last year on land improvement in Great Britain under the various Land Improvement Acts, and charged upon estates by rent-charges for limited terms of years, amounted to 14,629,795l. 11s. 3d. Four millions of this was public money advanced by the Exchequer under the Public Money Drainage Acts for the drainage of agricultural land, nearly all of which has now been repaid by the landowners. The remainder has been found through the several land improvement companies and by landowners themselves. The two principal items of expenditure under this head are—

drainage, 8,634,157l. 12s. 11d., and farm buildings, 3,823,019l. 7s. 2d. Under the Land Drainage Act of 1861, the object of which was to promote land drainage by enabling the landowners of a district to carry out a concerted system of main drainage and general outfalls, twelve Commissions of Sewers have been issued for the drainage of 28,811 acres, and twenty-six elective drainage districts have been constituted containing 62,742 acres. Under the powers given the Commissioners, by two special Acts, the Thames Valley Drainage Act and the Somersetshire Drainage Act, many thousands of acres in the upper valley of the Thames and in the Bridgwater level are being placed under a concerted system of drainage. The number of inspections made during the year was 2,450, and 2,113 extracts were supplied at a total cost to the applicants of 2,649l. 17s. 10d.; 4,254 maps have been altogether supplied, 121 of which were prepared during the year.

## SANITARY PRACTICE IN CANADA.

At the meeting of the Scottish Society of Arts, Edinburgh, Mr. W. Allan Carter, C.E., communicated a paper on “Canadian Sanitary Practice” by Mr. Alan Macdougall. The paper explained that the Canadian practice differed from that in this country principally in respect that the soil-pipes were taken up in the interior of the houses instead of on the outside. This was rendered necessary by the fact that during the severe winters experienced in Canada the soil-pipes would freeze up in a single night, and would then be useless for the rest of the winter. In regard to the water supply, a great quantity of water was used—on an average more than 100 gallons per head per day. This was due to the wholesale waste which had been allowed to take place, and which the authorities were now trying to check.

## TORONTO PUBLIC WORK.

THE City Engineer of Toronto, Canada, in his report, states that in 1884, 575,689-31 dols. was expended for public work in that city. Of this about 275,000 dols. was expended on roadways, 131,236 dols. on sewers, and 126,000 dols. for general street purposes. There are now 107-25 miles of sewers in the city, and 164 miles of streets. During the year 8-42 miles of cedar-block pavement were built. The cedar block already laid is showing signs of rapid wear, and the engineer recommends a more durable material on the main traffic streets. One hundred and thirty miles of streets have been paved since 1881, and of this 33-86 miles are laid with cedar block.

## TRADE NOTES.

A TWO-LIGHT Munich stained-glass window has just been erected in the parish church of Newchurch, Rossendale. The subjects represented are *St. Elizabeth teaching St. John and Giving Alms*. The work has been designed and executed by Messrs. Mayer & Co.

In a climate so changeable as ours a certain means of drying paint without injuring it is very important. This is one of the specialities to which Messrs. Randall Bros., of London, have always given their attention. Their French powdered dryers, liquid dryers, both pale and dark, are all valuable agents which the painter and decorator should keep in stock.

MESSRS. JONES & WILLIS have supplied the choir stalls in oak, and the handsomely-carved bishop's chair, for the Lea Memorial Church at Birmingham, which has been erected from the designs of Mr. J. A. Chatwin, architect, of Birmingham.

MESSRS. VENTOM, BULL & COOPER, of 35 Old Jewry, E.C., on Monday sold by auction the first portion of the Waterloo Estate, Edgwaite Road, Kilburn. The sale resulted in one of the most complete successes known in the district. Nearly all the plots were sold, the aggregate amounting to about 17,000l. The second portion sale will be held in about a month's time. The portion put up for sale on Monday comprised 111 lots of valuable freehold building plots, suitable for the erection of shops and houses, the principal frontage to the estate being on the Edgware Road, and thus commanding special facilities by omnibus or railway routes.

## COMPETITIONS OPEN.

WHITCHURCH.—May 9.—Designs are requested for a Small Cottage Hospital. Major Lee, Whitchurch.

## CONTRACTS OPEN.

ABERDEEN.—May 13.—For Building Farm Dwelling-house. Messrs. Anderson & Rae, 14 Union Terrace, Aberdeen.

ACTON.—May 15.—For Building Two Houses, Enfield Road. Mr. C. Nicholson Lailey, Surveyor, Ellesmere, Uxbridge Road, Acton, W.

ALCESTER.—May 11.—For Building Sanatorium or Hospital, with Administrative Buildings. Messrs. Harris, Martin & Harris, Architects, 119 Colmore Row, Birmingham.

ALNWICK.—May 23.—For Building Bridge over Tyelaw Burn. Mr. C. Percy, Clerk to the Highway Board, Alnwick.

ALVES.—May 12.—For Additions and Repairs to Farm Steading, Earnside. Messrs. A. & W. Reid, Architects, Elgin.

BACUP.—For Building Brick Chimney. Messrs. Butterworth & Brook, Britannia Quarries, near Bacup.

BALTIMORE HARBOUR.—May 11.—For Building Light-keeper's Dwelling, Skerkin Island, and Beacon, &c., Loo Rock. Plans at the Office of Public Works, Dublin.

BARNET.—May 11.—For Building Small House and Stable at Potter's Bar. Mr. Salmon, East Barnet Road, New Barnet.



**BARNET.**—May 23.—For Construction of Road (1,650 feet) with Kerb. Messrs. W. & F. Houghton, Surveyors, 61 Old Broad Street, E.C.

**BATTLE.**—May 13.—For Construction, &c., of Pump. Mr. A. J. Aitchison, C.E., 38 Parliament Street, Westminster.

**BELFAST.**—May 13.—For Building Warehouse for Show and Hire of Gas Stoves, &c. Mr. Samuel Black, Town Clerk, Belfast.

**BIRSTAL.**—May 21.—For Building Large Wesleyan Schools. Mr. Walter Hanstock, A.R.I.B.A., Branch Road, Batley.

**BOOTLE.**—May 9.—For Building Wards, Mortuary, &c., at the Borough Hospital. Messrs. C. O. Ellison & Son, Architects, 62 Dale Street, Liverpool.

**BOSTON.**—May 9.—For Building Farmhouses, Navenby and Fishtoft. Messrs. C. Kirk & Sons, Architects, Sleaford.

**BRIGHOUSE.**—May 14.—For Building Three Houses and Shops. Mr. M. Brayshaw, Architect, Bowling Old Lane, Bradford.

**BRITON FERRY.**—May 11.—For Alterations and Additions to Police Station. The Clerk of the Peace, Westgate Street, Cardiff.

**BUNDORAN.**—May 20.—For Excavation of Channel in Rock (400 feet), Construction of Boat Slip and Platform, Landing Quay (165 feet), and Inclined Approach. Plans, &c., at the Office of Public Works, Dublin.

**BURNHAM.**—May 9.—For the Work included in Section I of Restoration of Berrow Church, near Burnham. Mr. J. Houghton Spencer, Architect, 8 Hammet Street, Taunton.

**BURNLEY.**—May 13.—For Erection of Municipal Buildings, Police Courts, and Public Baths. Mr. H. Holtom, Architect, Bond Street, Dewsbury.

**CARBURY.**—May 11.—For Extension of Haggar House. Mr. J. H. Barr, Architect, Edenderry, King's County.

**CARLISLE.**—May 9.—For Works to Bridges in Cemetery. Mr. I. Cartmell, Clerk to the Burial Board, Town Hall, Carlisle.

**CARLISLE.**—May 11.—For Altering Cottages. Mr. J. Graham, Architect, Bowling Green, Lowther Street, Carlisle.

**CARLISLE.**—May 12.—For Extension of Caldwate and Denton Holme Schools. Mr. D. Birkett, Architect, 45 Lowther Street, Carlisle.

**CHATHAM.**—May 14.—For Re-erecting Clothing Factory. Mr. John Drake, Architect, Rochester.

**CHEDDLETON.**—May 18.—For Additions and Alterations to Churnet Grange. Messrs. W. Sugden & Son, Architects, Leek.

**CHRISTCHURCH.**—May 28.—For Building Schools for the Guardians of the Poor. Mr. Edgar H. Burton, Architect, Bournemouth.

**COLNE AND MARSDEN.**—May 25.—For Forming Brick Barrel Sewer; Building Piers, to carry a wrought-iron Trough; the Raising of an Occupation Road; Laying Iron and Earthenware Pipes, 960 yards. Mr. Henry Bancroft, C.E., 83 Mosley Street, Manchester.

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**CORNWALL.**—May 19.—For Construction of the Chasewater and Blackwater Railway Viaducts. The Engineer, Paddington Station.

**CROYDON.**—May 19.—For Re-slating, Repairing, and Painting Slaughter-houses. The Borough Engineer, 8 Katherine Street, Croydon.

**DEIGHTON.**—May 15.—For Extension of Woodhouse Corn Mill. Mr. J. E. Moseley, Architect, 4 Wellington Buildings, Huddersfield.

**DOWNHOLME.**—May 12.—For Altering and Refitting Parish Church. Mr. Wm. S. Hicks, Architect, 19 Mosley Street, Newcastle-on-Tyne.

**EDGWORTH.**—May 12.—For Construction of Reservoir. Mr. R. H. Swindlehurst, Engineer, Waterworks Office, Town Hall, Bolton.

**ELGIN.**—May 9.—For Additions and Alterations to Farm Buildings. Messrs. MacBey & Gordon, Surveyors, Elgin.

**ELLON.**—May 12.—For Building Wing to Steading at Millfield. Mr. Cowie, Architect, Crombly Bank, Ellon.

**FARSLEY.**—May 9.—For Additions to Wadlands Grange. Mr. Jowett Kendall, Architect, Idle.

**FLOOKBURGH.**—May 20.—For Building Farmhouse. Mr. Joseph Greenwood, Rothwaite, Cark, Carnforth.

**FRINDSBURY.**—May 9.—For Building Two Cottages. Mr. Walter Banks, Surveyor, 11 Victoria Street, Rochester.

**FULHAM.**—May 9.—For Completion of Medical Superintendent's House, Lodge, Stores, Reception-rooms and Discharge-rooms, Western Hospital. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**GRAYS.**—May 9.—For Building Hotel, Tap, and Two Shops. Mr. E. Clerk Allam, Architect, 63 Finsbury Pavement, E.C.

**GUILDFORD.**—May 13.—For Building Post Office. The Postmaster, Guildford.

**HALIFAX.**—May 18.—For Building Shops at Cross Hills. Messrs. Jackson & Fox, Architects, 22 George Street, Halifax.

**HALIFAX.**—May 23.—For Building Villa, Coach-house, Stables, &c. Mr. Chas. F. L. Horsfall, Architect, Lord Street Chambers, Halifax.

**HANGING HEATON.**—For Building Branch Store, House, &c. Mr. H. Holtom, Architect, Bond Street, Dewsbury.

**HASTINGS.**—May 11.—For Building Board School for Infants, Clive Vale. Messrs. Elworthy & Son, Architects, London Road, St. Leonards-on-Sea.

**HOLBECK.**—For Building Eight Houses, &c. Mr. C. F. Wilkinson, Architect, 8 Infirmary Street, Leeds.

**HORWICH.**—May 11.—For Building Shops for Locomotive Engines. Plans at the Engineer's Office, Hunt's Bank, Manchester.

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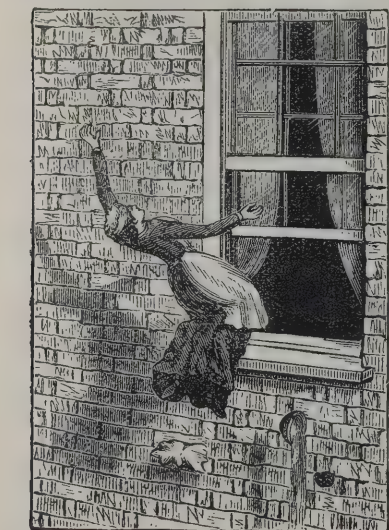
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**NORHAM.**—May 13.—For Building Stone Bridge over the Tweed. Mr. Stephen Sanderson, Secretary to the Tweed Bridges Trustees, Berwick-on-Tweed.

**NOTTINGHAM.**—May 23.—For Constructing and Laying-out Cattle Market, Eastcroft, including Bridge, Offices, Lodges, &c. Mr. A. Brown, Borough Engineer, Municipal Offices, Nottingham.

**OLD BOSFORD.**—For Building Additional School Premises. Mr. A. N. Bromley, Architect, Weekday Cross, Nottingham.

**PADDINGTON.**—May 13.—For Building Medical Superintendent's House, Registrar's Offices, &c., Harrow Road. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**PENZANCE.**—May 18.—For Erection and Completion of Six Shops and Stores in Market-jew Street. Mr. J. Wm. Trounson, Architect, Penzance.

**PETERBOROUGH.**—May 20.—For Building House. Mr. H. M. Townsend, Architect, The Precincts, Peterborough.

**POOLE.**—May 12.—For Repairing Sea Wall. Mr. J. Elford, Borough Surveyor, King Street, Poole.

**PRESTWICH ASYLUM.**—May 13.—For Constructing Circular Concrete Tank with Vaulted Roof. Mr. H. Littler, Architect, Bow Chambers, Cross Street, Manchester.

**ROCHDALE.**—May 12.—For Building Chimney at Sanitary Manure Works. Mr. Wm. Holt, Manager, Sanitary Manure Works, Rochdale.

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**ROTHERS.**—May 14.—For Building Dwelling-houses. Messrs. A. & W. Reid, Architects, Elgin.

**SALTBURN.**—May 11.—For Building large House. Mr. W. Peachey, Architect, Scarcroft Road, York.

**SAMPFORD SPIVEY.**—May 12.—For Building Barn, Stable, and Car House. Messrs. Andrew & Son, Land Agents, Plympton.

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**SHIRLEY AND CHILWORTH.**—May 14.—For Constructing Two Covered Reservoirs and Small Engine House. Messrs. Easton & Anderson, C.E., 3 Whitehall Place, S.W.

**SOOTHILL.**—May 20.—For Building Schools, Outbuildings, &c. Mr. H. B. Buckley, Architect, Old Vicarage, Batley.

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**STRETHAM, ELY.**—For Building Wesleyan Chapel. Mr. J. Gunton, Architect, Guildhall Chambers, Basinghall Street, E.C.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**TORQUAY.**—May 11.—For Building Cottage, Kennick Reservoir. Mr. T. S. Weeks, C.E., Waterworks Offices, Town Hall, Torquay.

**TOWCESTER.**—May 13.—For Erection of Cemetery Buildings, Laying-out Cemetery, &c. Mr. H. Packer, Clerk to the Burial Board, High Street, Towcester.

**TRURO.**—May 13.—For Erection of Farm Buildings, &c. Mr. A. Michelmores, Tregothnan Office, Truro.

**UPTON HELLIORIS.**—May 12.—For Additions and Improvements to Rectory. Mr. James Crocker, Architect, Queen Street, Exeter.

**WAKEFIELD.**—May 14.—For Pulling-down and Rebuilding Block of Houses and Shops. Mr. Wm. Watson, Architect, Barstow Square, Wakefield.

**WELLINGTON.**—May 21.—For Building Warehouse and Offices. Mr. E. T. Howard, Architect, North Street, Wellington, Somerset.

**WHITTINGHAM.**—May 18.—For Building Hospital for Infectious Cases. Mr. Lawrence Booth, Architect, 28 Faulkner Street, Manchester.

**WITTINGTON.**—May 15.—For Building Two Pavilions to Hospitals for Chorlton Union and Erecting Building for Nurses' Residence at the Workhouse. Messrs. Mangnall & Littlewood, Architects, 26 Brown Street, Manchester.

**WORKINGTON.**—May 23.—For Building Infirmary. Mr. George Dale Oliver, Architect, Pow Street, Workington.

**WORTLEY.**—May 16.—For Building St. Mary's Church. Messrs. Adams & Kelly, Architects, Imperial Building, Bond Street, Leeds.

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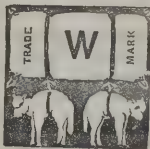
## ROYAL MUNICH STAINED GLASS ESTABLISHMENT.

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Only Best Pot Metal Glass and no Enamelling used.

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ORIGINAL MAKERS OF  
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MANCHESTER SQUARE, LONDON, W.

Fourteen Medals, including Gold Medal, International Health Exhibition, 1884.

## MARBLES.—THE ENDOLITHIC COMPY.

are now prepared to supply their beautiful MARBLES at prices which will enable Architects and Builders to produce Decorative Effects previously quite unattainable. Samples can be seen and Estimates obtained at the Offices of the Company.

114a Queen Victoria Street, City.

JOHN F. HASKINS, M.I.M.E., Managing Director.

## "SANITAS" THE HOUSEHOLD DISINFECTANT.

Sanitary Institute Medal, Exhibition, 1882.  
Silver Prize Medal, National Health Society, 1883.  
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Colourless—Non-Poisonous—Gives no Stain.

Disinfecting Fluids, Powders, Soaps, Ointments, Furniture Cream, Fumigators, &c., &c.

AS SUPPLIED TO 600 PUBLIC HEALTH BODIES.

The Sanitas Co., Limited, Bethnal Green, E

## GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

#### TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.  
Yours, &c.  
JAMES WEIR, F.R.I.B.A."

"To Mr. Grundy.  
"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.  
February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West-Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.  
"Mr. John Grundy."  
From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.  
"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.  
"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City Road, London.  
Works—TYLDESLEY, near MANCHESTER.



| BIDEFORD.                           |        |      |
|-------------------------------------|--------|------|
| For Building Post-office, Bideford. |        |      |
| Chapple, Northam . . .              | £1,175 | 0 0  |
| Squire, Bideford . . .              | 1,127  | 4 8  |
| Cock & Lamerton, Bideford . .       | 1,060  | 2 0  |
| Beer, Monkleigh . . .               | 1,045  | 0 0  |
| Glover & Hoar, Northam . . .        | 1,040  | 17 0 |
| GENT & MARTIN (accepted) . .        | 918    | 8 6  |

| CARDIFF.   |  |  |
|--|--|--|
| For Building Addition to Workshop, off Hickman Road, Penarth, for Mr. Roberts. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff. |  |  |
| For Erecting Block of Houses at Cadoxton, for Mr. J. R. COLLETT. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.               |  |  |

ROWLEDGE (accepted).

| CRONDALL.   |        |      |
|---|--------|------|
| For Alterations and Additions to Mansion, Redfields, Crondall. Mr. J. ALFRED EDGAR, Architect, Farnham, Surrey. |        |      |
| Parfitt . . . . .   | £1,167 | 0 0  |
| Martin, Wells & Co. . . . .   | 1,099  | 0 0  |
| Diamond . . . . .   | 1,003  | 10 0 |
| Snuggs . . . . .  | 1,000  | 0 0  |
| Tompsett & Kingham . . . .  | 985    | 0 0  |
| Kemp . . . . .  | 935    | 0 0  |
| Garland . . . . .   | 885    | 0 0  |
| Liming Bros. . . . .  | 877    | 0 0  |

| DARTMOUTH.   |      |     |
|--|------|-----|
| For Alterations and Repairs at Prospect House, Dartmouth, for Mr. R. W. Soper. Mr. E. H. BACK, Architect, Dartmouth. |      |     |
| Henley . . . . .   | £290 | 0 0 |
| Veale . . . . .  | 267  | 6 0 |
| WILLIAMS (accepted) . . . .  | 243  | 0 0 |

| DARTMOUTH—continued.   |      |      |
|--|------|------|
| For Alterations and Repairs at Premises, Spithead, Dartmouth, for Mr. Ford. Mr. E. H. BACK, Architect, Dartmouth. Quantities supplied. |      |      |
| Winsor . . . . .   | £163 | 17 0 |
| Henley . . . . .   | 161  | 10 0 |
| MAUNDER (accepted) . . . .   | 138  | 0 0  |

| ELLAND.   |  |  |
|---|--|--|
| For Building Two Dwelling-houses, Catherine Street, Elland. |  |  |

| Accepted Tenders.   |      |     |
|---|------|-----|
| Gledhill & Sons, Elland, mason . .                        | £170 | 0 0 |
| Wilson, Elland, joiner . . . .                            | 70   | 0 0 |
| Wadsworth & Sons, Greetland, slater and plasterer . . . . | 38   | 0 0 |
| Aspinall, Elland, plumber and glazier . . . . .           | 9    | 0 0 |

## FORDINGBRIDGE.

For Erection of New Workhouse Buildings, Fordingbridge, for the Guardians of the Poor of the Counties of Hants and Wilts. Mr. FRED BATH, A.R.I.B.A., F.S.I., Architect, Crown Chambers, Salisbury, and 342 Strand, London, W.C. Quantities supplied.

| Name.                            | General Provisions. |    |    | Main Block. |    |    | Entrance Blocks. |    |    | Children's Block. |    |    | Infirmary Block. |    |    | Drainage Tanks, &c. |    |    | Total. |    |    |
|----------------------------------|---------------------|----|----|-------------|----|----|------------------|----|----|-------------------|----|----|------------------|----|----|---------------------|----|----|--------|----|----|
|                                  | £                   | s. | d. | £           | s. | d. | £                | s. | d. | £                 | s. | d. | £                | s. | d. | £                   | s. | d. | £      | s. | d. |
| Edwards, Bournemouth . . .       | 328                 | 0  | 0  | 8,417       | 16 | 7  | 2,674            | 15 | 6  | 2,411             | 15 | 11 | 1,988            | 1  | 11 | 752                 | 4  | 3  | 16,572 | 14 | 3  |
| Hopkins & Son, Salisbury . .     | 153                 | 0  | 0  | 7,147       | 18 | 0  | 2,597            | 13 | 0  | 2,241             | 12 | 0  | 2,238            | 8  | 0  | 605                 | 9  | 0  | 14,989 | 0  | 0  |
| Minty, Bournemouth . . .         | 283                 | 15 | 0  | 6,850       | 10 | 0  | 2,156            | 5  | 0  | 2,186             | 0  | 0  | 1,789            | 17 | 0  | 475                 | 3  | 0  | 13,741 | 10 | 0  |
| W. J. & C. T. Young, Salisbury . | 150                 | 0  | 0  | 6,692       | 0  | 0  | 2,119            | 0  | 0  | 1,855             | 0  | 0  | 1,810            | 0  | 0  | 633                 | 0  | 0  | 13,259 | 0  | 0  |
| Church, Bristol . . . .          | 60                  | 0  | 0  | 6,544       | 0  | 0  | 2,110            | 0  | 0  | 2,010             | 0  | 0  | 1,695            | 0  | 0  | 574                 | 0  | 0  | 12,993 | 0  | 0  |
| Williams & Sons, Bournemouth .   | 72                  | 8  | 9  | 6,235       | 2  | 10 | 2,009            | 8  | 6  | 1,894             | 11 | 9  | 1,717            | 8  | 9  | 601                 | 9  | 9  | 12,530 | 10 | 4  |
| Harris, Salisbury . . . .        | 175                 | 0  | 0  | 6,490       | 16 | 1  | 2,037            | 6  | 4  | 1,855             | 15 | 9  | 1,571            | 16 | 9  | 391                 | 12 | 11 | 12,522 | 8  | 5  |
| Jenkins & Sons, Bournemouth .    | 100                 | 0  | 0  | 6,380       | 0  | 0  | 1,990            | 0  | 0  | 1,890             | 0  | 0  | 1,570            | 0  | 0  | 590                 | 0  | 0  | 12,520 | 0  | 0  |
| Shering, Fordingbridge . . .     | 125                 | 15 | 0  | 6,481       | 16 | 0  | 2,104            | 10 | 10 | 1,506             | 19 | 3  | 1,590            | 4  | 5  | 591                 | 8  | 0  | 12,400 | 13 | 6  |
| Vickers, Nottingham . . .        | 44                  | 10 | 0  | 6,204       | 16 | 1  | 2,037            | 11 | 7  | 1,792             | 6  | 2  | 1,549            | 18 | 7  | 621                 | 0  | 8  | 12,250 | 3  | 1  |
| Clarke & Hitching, Poole . .     | 41                  | 0  | 0  | 6,093       | 6  | 1  | 1,873            | 17 | 8  | 1,779             | 0  | 0  | 1,596            | 2  | 10 | 599                 | 13 | 5  | 11,983 | 0  | 0  |
| Ball, Cowes, I.W. . . . .        | 62                  | 0  | 0  | 6,109       | 0  | 0  | 1,912            | 0  | 0  | 1,838             | 0  | 0  | 1,526            | 0  | 0  | 527                 | 0  | 0  | 11,974 | 0  | 0  |
| Sanders, Southampton . . .       | 23                  | 0  | 0  | 6,048       | 0  | 0  | 1,911            | 0  | 0  | 1,822             | 0  | 0  | 1,498            | 0  | 0  | 560                 | 0  | 0  | 11,862 | 0  | 0  |
| Longley, Crawley . . . .         | 94                  | 0  | 0  | 5,890       | 18 | 5  | 1,860            | 0  | 0  | 1,787             | 0  | 0  | 1,493            | 0  | 0  | 565                 | 1  | 7  | 11,680 | 0  | 0  |
| Bull & Sons, Southampton . .     | 43                  | 0  | 0  | 5,505       | 0  | 0  | 1,765            | 0  | 0  | 1,623             | 0  | 0  | 1,368            | 0  | 0  | 475                 | 0  | 0  | 10,779 | 0  | 0  |
| GREENWOOD, Mansfield * . .       | 133                 | 19 | 7  | 5,207       | 12 | 1  | 1,656            | 17 | 6  | 1,513             | 11 | 6  | 1,331            | 12 | 6  | 456                 | 6  | 10 | 10,300 | 0  | 0  |

\* Accepted, subject to omission of Infirmary Block, Boundary Walls, General Fittings, &amp;c.

## ARTISTIC ♦ VENTILATION. ♦



## SHARP &amp; CO., Hygienic and Hydraulic Engineers.

## TESTIMONIAL

From WALTER REID, Esq., M.D., &amp;c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"November 11, 1881.

"Yours truly,

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

HYDRAULIC RAMS (FYFE'S PATENT) AND SANITARY APPLIANCES.

Health Exhibition Awards:—1 GOLD, 1 SILVER, 4 BRONZE MEDALS.

11 HOLBORN CIRCUS, LONDON, E.C.

PRIMROSE & CO. CHURCH ST. SHEFFIELD. ECLIPSE PATENT ROOF GLAZING NO PUTTY, PAINT, ZINC OR OTHER PERISHABLE MATERIAL.

IN EXTENSIVE USE FOR RAILWAY STATIONS, MILLS, &c.  
NO OTHER GLAZING CAN BE WARRANTED INDESTRUCTIBLE.

PRIZE MEDAL AWARDS: KENSINGTON, MANCHESTER, LIVERPOOL, DONCASTER 1882-3.  
THE ONLY GLAZING AWARD, INTERNATIONAL HEALTH EXHIBITION, 1884.

## FREDERICK YOUNG &amp; CO.,

PRUDENTIAL WORKS, Greville Street, Holborn, E.C., at the rear of the Prudential Life Assurance Company.  
SHOP AND OFFICE FITTERS, EXHIBITION STANDS, AND CABINET WORK.



## DEVIZES.

|   |        |   |   |
|---|--------|---|---|
| For Erection of Brewery and Buildings, Devizes, for Mr. H. A. Wadworth. Mr. JOHN A. RANDALL, Architect, Devizes. Quantities supplied. |        |   |   |
| Brown, Littleton  | £5,150 | 0 | 0 |
| Bywaters, London  | 4,880  | 0 | 0 |
| Mullings, Devizes   | 4,350  | 0 | 0 |
| Forse, Bristol  | 4,298  | 0 | 0 |
| Church, Bristol   | 4,173  | 0 | 0 |
| DREW, Stroud (accepted)   | 4,164  | 0 | 0 |
| Simmonds, Reading   | 4,143  | 0 | 0 |
| Cowlin & Son, Bristol   | 3,975  | 0 | 0 |
| Greenwood, Mansfield  | 3,970  | 0 | 0 |

## DOVER.

|   |        |    |   |
|---|--------|----|---|
| For Extension of the Borough Outfall Sewer, Dover. Mr. M. CURRY, Borough Surveyor. Quantities supplied by the Engineer. |        |    |   |
| W. & T. Denne, Walmer   | £7,518 | 0  | 0 |
| Adcock, Dover   | 7,438  | 0  | 0 |
| Cullen, Dover   | 7,220  | 11 | 4 |
| Meats Brothers, Hove  | 6,697  | 11 | 6 |
| STIFF, Dover (accepted)   | 6,700  | 0  | 0 |
| Surveyor's estimate   | 6,500  | 0  | 0 |

## DUNFERMLINE.

|  |        |    |   |
|--|--------|----|---|
| For Causewaying Streets with Whinstone Setts, Dunfermline. |        |    |   |
| G. & R. COUSIN (accepted)                                  | £1,771 | 10 | 0 |
| L. & W. McDonald   | 1,760  | 0  | 0 |
| Wilson (informal)  | 1,619  | 9  | 4 |

## ILKESTON.

|   |      |    |   |
|---|------|----|---|
| For Cleaning, Painting, and Decorating Ebenezer Chapel and Schools, Awsworth Road, Ilkeston. Mr. SAMUEL RICHARDS, jun., Architect, 63 Cotmanhay Road, Ilkeston. |      |    |   |
| Spray & McQuire, Nottingham   | £143 | 0  | 0 |
| Gillott, Eastwood   | 100  | 0  | 0 |
| Read & Norman, Stapleford   | 96   | 0  | 0 |
| Pollard, Nottingham   | 90   | 10 | 0 |
| Williams, Bingham   | 78   | 4  | 0 |
| Allen Bros., Ilkeston   | 70   | 0  | 0 |
| CLEMENTS, Nottingham (accepted)   | 69   | 10 | 0 |

## MARYPORT.

The list of tenders for the Construction of Main Sewage Works at Maryport was published in *The Architect* of May 2. Mr. Smith, whose tender was accepted, has applied to the Trustees for permission to amend his tender. After consideration, it was decided to request fresh tenders for the Works.

## LEICESTER.

For Additions to Factory in Southgate Street, Leicester, for Messrs. S. D. Stretton & Sons. Mr. J. F. SMITH, Architect, Leicester. Quantities by the Architect.

|                    |      |   |   |
|--------------------|------|---|---|
| Tyers & Yates      | £665 | 0 | 0 |
| Sharp & Sons       | 628  | 0 | 0 |
| Duxbury & Son      | 593  | 0 | 0 |
| Johnson            | 570  | 0 | 0 |
| Dewsbury           | 579  | 0 | 0 |
| Bland              | 565  | 0 | 0 |
| ELLIOTT (accepted) | 549  | 0 | 0 |

For Building Board School at Keyham, Leicester. Messrs. MACAULAY & DRAPER, Architects, Leicester. Quantities by the Architects.

|  |      |    |    |
|--|------|----|----|
| Turner, Leicester                          | £579 | 10 | 0  |
| Cox, Leicester                             | 575  | 0  | 0  |
| Clarke, Melton Mowbray                     | 515  | 0  | 0  |
| Ogden & Co., Leicester                     | 483  | 15 | 10 |
| Ratnett, Leicester                         | 480  | 0  | 0  |
| Sleath, Rothley                            | 447  | 0  | 0  |
| Stevens, Leicester                         | 434  | 18 | 0  |
| R. & W. Mansfield, Syston                  | 433  | 0  | 0  |
| Hickling, Syston                           | 430  | 10 | 0  |
| Roberts & Screaton, Enderby                | 421  | 6  | 0  |
| GREAVES & BROUGHTON, Huncartton (accepted) | 416  | 16 | 10 |

## LIVERPOOL.

|  |      |    |    |
|--|------|----|----|
| For Completion of Kendrick Street, Seaforth, for the Waterloo-with-Seaforth Local Board. Mr. R. THOMPSON, Surveyor, Great George's Road, Waterloo. |      |    |    |
| Ball, Southport  | £370 | 1  | 11 |
| Catterall & Co., Liverpool   | 302  | 19 | 7  |
| Keating & Sons, Liverpool  | 271  | 14 | 7  |
| Chadwick, Liverpool  | 249  | 7  | 0  |
| Fawkes Bros., Southport  | 242  | 12 | 1  |
| McDonald, Bootle   | 233  | 7  | 2  |
| ARMSTRONG, Bootle (accepted)   | 230  | 0  | 0  |

## LIVERPOOL—continued.

|   |      |   |   |
|---|------|---|---|
| For Staircase to Walker Art Gallery. Mr. C. SHERLOCK, Architect, 63 South John Street, Liverpool. |      |   |   |
| Firth   | £273 | 4 | 0 |
| Urmson  | 265  | 0 | 0 |
| Jones   | 254  | 0 | 0 |
| Thornton & Sons   | 250  | 0 | 0 |
| Chuck   | 246  | 0 | 0 |
| Miller  | 245  | 0 | 0 |
| W. & F. Witter  | 242  | 0 | 0 |
| Holme & Green   | 238  | 0 | 0 |
| Haigh   | 234  | 0 | 0 |
| Henshaw   | 234  | 0 | 0 |
| Tomkinson & Co.   | 233  | 0 | 0 |
| Toul  | 218  | 0 | 0 |
| BROWN & BACKHOUSE (accepted)  | 231  | 0 | 0 |

## LONDON.

|   |         |   |   |
|---|---------|---|---|
| For Building Board School, St. Andrew Street, Battersea. Mr. T. J. BAILEY, Architect. |         |   |   |
| Turtle & Appleton   | £14,305 | 0 | 0 |
| Chappell  | 13,857  | 0 | 0 |
| Reading   | 13,550  | 0 | 0 |
| Brass   | 13,472  | 0 | 0 |
| Hart  | 13,427  | 0 | 0 |
| Shurmur   | 13,392  | 0 | 0 |
| F. & F. J. Wood   | 13,300  | 0 | 0 |
| Scrivener & Co.   | 13,268  | 0 | 0 |
| Downs   | 13,021  | 0 | 0 |
| Howell & Son  | 12,986  | 0 | 0 |
| Lathey Bros.  | 12,972  | 0 | 0 |
| Tongue  | 12,960  | 0 | 0 |
| Gentry  | 12,950  | 0 | 0 |
| Wall Bros.  | 12,940  | 0 | 0 |
| Oldrey  | 12,900  | 0 | 0 |
| Holloway  | 12,890  | 0 | 0 |
| Boyce   | 12,850  | 0 | 0 |
| Grover & Son  | 12,800  | 0 | 0 |
| Jerrard   | 12,693  | 0 | 0 |
| Croaker   | 12,650  | 0 | 0 |
| Stimpson & Co.  | 12,640  | 0 | 0 |
| C. Wall   | 12,587  | 0 | 0 |
| Cox   | 12,583  | 0 | 0 |
| Holloway Bros.  | 12,578  | 0 | 0 |
| Atherton & Latta  | 12,495  | 0 | 0 |
| Johnson   | 12,200  | 0 | 0 |

THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.VENTILATION  
WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the Illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning on one gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



## LONDON—continued.

|   |            |
|---|------------|
| For Pulling Down and Rebuilding No. 4 Bell Yard, Fleet Street. Messrs. FAREBROTHER, ELLIS, CLARK & Co., Architects. |            |
| Perry & Co. . . . .   | £1,870 0 0 |
| Brass . . . . .   | 1,780 0 0  |
| Marsland . . . . .  | 1,755 0 0  |
| Downs . . . . .   | 1,715 0 0  |
| Lawrance . . . . .  | 1,705 0 0  |
| Conder . . . . .  | 1,671 0 0  |

For Completion of Sanitary Turret, &c., at the Workhouse, Arthur Street, for the Guardians of St. Luke, Chelsea. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities not supplied.

|                                       |            |
|---------------------------------------|------------|
| Balaam Bros. . . . .                  | £1,600 0 0 |
| W. Johnson . . . . .                  | 1,580 0 0  |
| J. H. Johnson . . . . .               | 1,483 0 0  |
| Haynes . . . . .                      | 1,335 0 0  |
| Angood . . . . .                      | 1,240 0 0  |
| POTTER, Banstead (accepted) . . . . . | 1,150 0 0  |

For Building Board School, Biscay Road. Mr. T. J. BAILEY, Architect.

|                                 |             |
|---------------------------------|-------------|
| Patman & Fotheringham . . . . . | £15,703 0 0 |
| Turtle & Appleton . . . . .     | 15,387 0 0  |
| Chappell . . . . .              | 14,780 0 0  |
| Lathey Bros. . . . .            | 14,699 0 0  |
| Reading . . . . .               | 14,649 0 0  |
| Brass . . . . .                 | 14,591 0 0  |
| Oldrey . . . . .                | 14,000 0 0  |
| Howell & Son . . . . .          | 13,995 0 0  |
| Gentry . . . . .                | 13,860 0 0  |
| F. & F. J. Wood . . . . .       | 13,850 0 0  |
| Boyce . . . . .                 | 13,790 0 0  |
| Scrivener & Co. . . . .         | 13,742 0 0  |
| Hart . . . . .                  | 13,694 0 0  |
| Grover & Son . . . . .          | 13,642 0 0  |
| Wall Bros. . . . .              | 13,603 0 0  |
| Jerrard . . . . .               | 13,589 0 0  |
| Downs . . . . .                 | 13,552 0 0  |
| Cox . . . . .                   | 13,540 0 0  |
| Holloway . . . . .              | 13,507 0 0  |
| Shurmer . . . . .               | 13,462 0 0  |
| Atherton & Latta . . . . .      | 13,400 0 0  |
| Stimpson & Co. . . . .          | 13,400 0 0  |
| Wall . . . . .                  | 13,352 0 0  |
| Johnson . . . . .               | 12,900 0 0  |

## LONDON—continued.

For Shops and Offices adjoining the Monument Station, King William Street and Eastcheap. Messrs. ISAACS & FLORENCE, Architects. Quantities by Mr. L. C. Riddett.

|                                 |            |
|---------------------------------|------------|
| Perry & Co. . . . .             | £6,767 0 0 |
| Williams & Son . . . . .        | 6,647 0 0  |
| Holliday & Greenwood . . . . .  | 6,484 0 0  |
| Shaw . . . . .                  | 6,474 0 0  |
| Simpson & Son . . . . .         | 6,445 0 0  |
| Grover & Son . . . . .          | 6,288 0 0  |
| J. & J. Greenwood . . . . .     | 6,125 0 0  |
| Conder . . . . .                | 6,096 0 0  |
| Patman & Fotheringham . . . . . | 5,973 0 0  |

## MARKET WEIGHTON.

For Construction of Covered Reservoir, Buildings, and other Works at the Waterworks, Market Weighton. Mr. JOSIAH FORSTER FAIRBANK, Engineer, 14 Parliament Street, Westminster.

|                               |            |
|-------------------------------|------------|
| Jackson & Son, Hull . . . . . | £1,300 0 0 |
| Bell, Weighton . . . . .      | 889 17 9   |

## NOTTINGHAM.

For Building Wesleyan Schools, Nottingham. Mr. A. H. GOODALL, Architect, Nottingham. Quantities by the Architect.

## If Boarded Ceiling.

|                                     |             |
|-------------------------------------|-------------|
| Beck, Matlock Bridge . . . . .      | £1,859 18 0 |
| Bell & Son . . . . .                | 1,779 0 0   |
| Parr . . . . .                      | 1,735 12 0  |
| Young . . . . .                     | 1,735 0 0   |
| Adams . . . . .                     | 1,729 0 0   |
| Baynes . . . . .                    | 1,727 11 0  |
| Clarke . . . . .                    | 1,708 0 0   |
| Brownsell . . . . .                 | 1,683 17 0  |
| Middleton . . . . .                 | 1,655 0 0   |
| Cooper . . . . .                    | 1,623 12 0  |
| Attenborrow . . . . .               | 1,614 0 0   |
| Bailey . . . . .                    | 1,552 17 0  |
| Scattergood . . . . .               | 1,550 0 0   |
| Price . . . . .                     | 1,509 0 0   |
| Evans & Woodcock . . . . .          | 1,483 0 0   |
| CUTHBERT BROS. (accepted) . . . . . | 1,486 0 0   |

## NOTTINGHAM—continued.

## If Plaster Ceiling.

|                                     |            |
|-------------------------------------|------------|
| Beck, Matlock Bridge . . . . .      | £1,839 7 6 |
| Bell & Son . . . . .                | 1,734 0 0  |
| Parr . . . . .                      | 1,695 14 0 |
| Young . . . . .                     | 1,690 0 0  |
| Baynes . . . . .                    | 1,690 0 0  |
| Clarke . . . . .                    | 1,688 0 0  |
| Adams . . . . .                     | 1,679 0 0  |
| Brownsell . . . . .                 | 1,657 5 0  |
| Middleton . . . . .                 | 1,635 0 0  |
| Attenborrow . . . . .               | 1,599 0 0  |
| Cooper . . . . .                    | 1,592 3 0  |
| Bailey . . . . .                    | 1,521 0 0  |
| Scattergood . . . . .               | 1,515 0 0  |
| Evans & Woodcock . . . . .          | 1,510 0 0  |
| CUTHBERT BROS. (accepted) . . . . . | 1,473 0 0  |
| Price . . . . .                     | 1,470 0 0  |

## NEW YORK.

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## NEWBURY.

For Erection of New District Hospital, for Nine Beds, at Newbury. Mr. H. G. TURNER, A.R.I.B.A., Architect, 1 Great James Street, W.C. Quantities by Mr. E. A. Jackson, A.R.I.B.A., 1 Great James Street, W.C.

|   |            |
|---|------------|
| Proctor, Woolwich . . . . .             | £2,996 0 0 |
| Clarke, Poole . . . . .                 | 2,359 10 0 |
| Claridge, Banbury . . . . .             | 2,141 0 0  |
| Elms, Newbury . . . . .                 | 2,100 0 0  |
| Kingerlee, Oxford . . . . .             | 2,060 0 0  |
| Botsford, Newbury . . . . .             | 2,019 0 0  |
| Elliott, Newbury . . . . .              | 1,996 0 0  |
| Williams, Abingdon . . . . .            | 1,993 0 0  |
| Woodbridge, Maidenhead . . . . .        | 1,990 0 0  |
| Gibson, High Wycombe . . . . .          | 1,975 0 0  |
| Carless & Co., Richmond . . . . .       | 1,967 0 0  |
| Holt, Croydon . . . . .                 | 1,960 18 0 |
| Leslie & Knight, London . . . . .       | 1,950 0 0  |
| Kirk Bros., Addlestone . . . . .        | 1,900 0 0  |
| Martin, Wells & Co., London . . . . .   | 1,866 12 6 |
| Simonds, Reading . . . . .              | 1,855 0 0  |
| Bull, Sons & Co., Southampton . . . . . | *1,788 0 0 |

\* Accepted.

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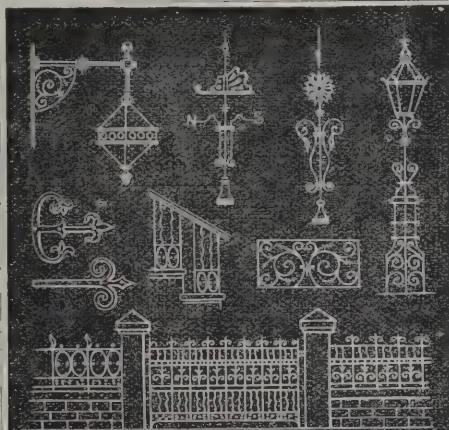
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|                     | A         |  |
|---------------------|-----------|--|
| Proctor             | £184 0 0  |  |
| Clarke              | 154 3 6   |  |
| Claridge            | 141 0 0   |  |
| Elms                | 128 0 0   |  |
| Kingerlee           | 130 0 0   |  |
| Botsford            | 135 0 0   |  |
| Elliott             | 127 0 0   |  |
| Williams            | 133 0 0   |  |
| Woodbridge          | 130 0 0   |  |
| Gibson              | 140 10 10 |  |
| Carless & Co.       | 113 0 0   |  |
| Holt                | 125 0 0   |  |
| Leslie & Knight     | 140 0 0   |  |
| Kirk Bros.          | 131 0 0   |  |
| Martin, Wells & Co. | 124 8 10  |  |
| Simonds             | 117 10 0  |  |
| Bull, Sons & Co.    | *118 0 0  |  |

|                     | B       | C        |
|---------------------|---------|----------|
| Proctor             | £11 5 0 | £27 15 0 |
| Clarke              | 7 8 6   | 33 1 0   |
| Claridge            | 25 0 0  | 77 0 0   |
| Elms                | 19 0 0  | 45 10 0  |
| Kingerlee           | 22 11 6 | 88 0 0   |
| Botsford            | 19 0 0  | 74 0 0   |
| Elliott             | 22 9 0  | 74 0 0   |
| Williams            | 18 7 0  | 51 9 0   |
| Woodbridge          | 23 10 0 | 46 10 0  |
| Gibson              | 22 3 6  | 47 17 4  |
| Carless & Co.       | 11 5 0  | 49 0 0   |
| Holt                | 18 10 0 | 51 15 0  |
| Leslie & Knight     | 9 15 0  | 28 0 0   |
| Kirk Bros.          | 14 8 0  | 64 0 0   |
| Martin, Wells & Co. | 29 5 8  | 46 4 9   |
| Simonds             | 29 10 0 | 101 15 0 |
| Bull, Sons & Co.    | 7 6 0   | *25 5 6  |

A. Extra for enlarging male ward for three additional beds.

B. Extra for pitch pine instead of yellow deal floors in wards and operating-room.

C. Extra for oak instead of yellow deal floors in wards and operating-room.

\* Accepted.

## OADBÝ.

|  |             |
|--|-------------|
| For Building Thirteen Houses at Oadby. Mr. E. L. MILES, Architect, Horse Fair Street, Leicester. |             |
| Brown, Leicester   | £1,468 15 0 |
| J. Stevens, Oadby  | 1,441 2 6   |
| Carter, Aylestone  | 1,413 0 0   |
| Ogden & Co., Leicester   | 1,365 17 8  |
| Northan, Knighton  | 1,301 9 7   |
| Flude, Leicester   | 1,287 0 0   |
| Harwood, Evington  | 1,278 3 0   |
| Ellingworth, Clarendon Park  | 1,266 0 0   |
| Bass, Leicester  | 1,262 10 0  |
| Richardson & Son, Leicester  | 1,261 1 3   |
| J. Stevens, Leicester  | 1,230 10 0  |
| Jennings, Harborough   | 1,230 0 0   |
| Atkins & Co., Clarendon Park   | 1,227 8 0   |
| Warren, Leicester  | 1,226 3 0   |
| Ridett, Leicester  | 1,199 0 0   |
| Angrave, Aylestone   | 1,191 0 0   |
| Wright, Wigston  | 1,151 0 0   |
| Tearby, Leicester  | 1,097 10 0  |
| CURSLEY, Leicester (accepted)  | 1,037 12 4  |

## OBAN.

|   |             |
|---|-------------|
| For Reconstruction of Ardour Pier, Oban. Mr. G. WOULFE BRENNAN, C.E., Engineer. Quantities by the Engineer. |             |
| Bain & Co., Boness  | £1,138 12 9 |
| Mackay, Inverness   | 1,057 14 6  |
| Moffat, Paisley   | 915 14 4    |
| Fraser, Inverness   | 904 16 4    |
| Cumming, Onich  | 760 0 0     |
| Engineer's estimate   | 798 0 0     |

## TERRINGTON.

|  |           |
|--|-----------|
| For Building Wesleyan School, Terrington, Bricks and Carting found by the Trustees. Mr. J. A. HILLAM, Architect. |           |
| Humphry, Terrington  | £372 12 0 |
| Alflett & Leach, Lynn  | 369 0 0   |
| Fryers, Lynn   | 347 0 0   |
| Wrenford, Lynn   | 330 0 0   |
| Bone, Lynn   | 325 0 0   |
| Reeder & Kelson, Tilney  | 319 9 0   |
| MOUNTSEER, Terrington (accepted)   | 315 12 0  |

## PEN-Y-RONT.

|   |          |
|---|----------|
| For Re-erection of Chapel at Pen-y-Ront. Owens, Llandrindod Wells | £665 0 0 |
| Davies, Dolan   | 600 0 0  |
| Price & Deakins, Knucklas   | 548 0 0  |
| Williams, Llandrindod Wells                                       | 500 0 0  |
| BETHEL, Llandrindod Wells (accepted)                              | 490 0 0  |

## SILVERTOWN.

|   |          |
|---|----------|
| For Building Detached Private Dwelling-house, Silvertown, for the Building Committee of the Silvertown Presbyterian Church. Mr. J. O. COOK, Architect, 24 William Street, Woolwich. |          |
| Sharpe, Bow   | £630 0 0 |
| Proctor, South Woolwich   | 550 0 0  |
| Burrows, Forest Gate  | 535 0 0  |
| Covil, South Woolwich   | 495 0 0  |
| Howe & White, Wallington  | 495 0 0  |
| Forsdike, Plumstead   | 480 0 0  |
| Harris, North Woolwich  | 467 0 0  |
| Raynold, Reyer & Co., North Woolwich  | 424 10 0 |
| Barkel, Plaistow  | 395 0 0  |
| BEADEL, West Ham (accepted)   | 375 0 0  |

## TOTTENHAM.

|  |  |
|--|--|
| For Building Engine-house for 100 horse-power Engine, at Sewage Farm, Page Green, Tottenham. Mr. W. A. H. DE PAPE, Engineer. Quantities by Messrs. Campbell & Son. |  |
|--|--|

## Reduced Design.

|  |             |
|--|-------------|
| Bloomfield   | £1,874 0 0  |
| Porter   | 1,744 5 7   |
| Knight & Son   | 1,558 12 6  |
| Williamson   | 1,543 7 0   |
| Proctor, Woolwich  | 1,520 0 0   |
| Hack   | 1,483 0 0   |
| Humphreys  | 1,463 13 11 |
| Bell   | 1,413 12 3  |
| Barnes   | 1,359 0 0   |
| Hart   | 1,330 14 6  |
| Cornwell, Bishop Stortford   | Informal.   |
| Engineer's estimate  | 1,652 10 6  |
| Mr. Percival Hart's, of West Green Road, Tottenham, has been accepted. |             |






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For Erection of a Liberal Club at Wardle, near Rochdale. Mr. JESSE HORSFALL, M.S.A., Architect, Rochdale and Todmorden. Quantities by the Architect.

|                                   |      |   |   |
|-----------------------------------|------|---|---|
| Eastwood & Greenwood, Rochdale    | £760 | 0 | 0 |
| Healey & Son, Rochdale            | 755  | 0 | 0 |
| Berry & Son, Rochdale             | 740  | 0 | 0 |
| Hartley, Wardle                   | 671  | 0 | 0 |
| NORRIS, Rochdale *                | 645  | 0 | 0 |
| *Accepted with certain deductions | 610  | 0 | 0 |

**WELLINGTON.**

For Restoration of Uppington Church, near Wellington, Shropshire. Mr. J. P. PRITCHETT, Architect, Darlington. Quantities by the Architect.

*Nave and Chancel.*

|                              |      |    |   |
|------------------------------|------|----|---|
| Morris, Shrewsbury, joiner   | £498 | 5  | 6 |
| Davies, Shrewsbury, painter  | 46   | 6  | 6 |
| Dodwell, Shrewsbury, plumber | 30   | 14 | 0 |

Masons' work being done by daywork.

**MISTAKES IN PLUMBING.**

A LECTURE under the above title was lately given at the New York Trades School. The following heads give a general outline of mistakes most commonly made.

1. Not to carefully determine what the grade of a sewer shall be before commencing to lay the pipes.
2. Putting the pipes into a tight hole in the front wall where it enters the cellar.
3. Using T connections for branches for soil and waste pipes.
4. Tipping up traps so as to cause them to lose their seal.
5. Using larger traps than are necessary.
6. Connecting wastes from safes with soil or waste pipes.
7. Putting in a trap at foot of soil pipe.
8. Connecting sanitary flushing closets without making proper provision for the ventilation of the traps or branches.
9. Running a vent pipe in such a manner

as to form traps, or where the overflow can enter.

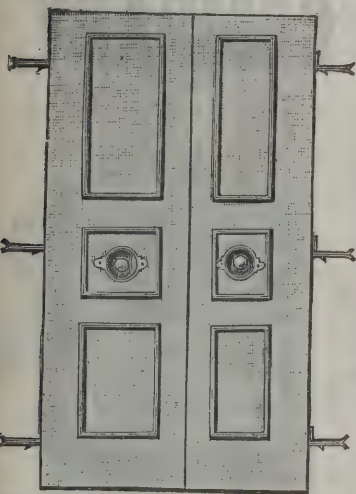
10. Running the ventilating pipes into chimneys or ventilating flues.
11. Placing traps at too great a distance from the fixtures for which they are intended.
12. The use, where it can be avoided, of pan-closets.
13. Connecting overflow of tanks directly with soil or waste-pipes.
14. Having waterclosets in rooms or opening into rooms where storage tanks are used.
15. Breaking joints in iron pipe, and not using proper fittings for change of direction; also using pieces of pipe as substitutes for sleeves or hubs.
16. Neglecting to trap leaders.
17. Connecting branch wastes with water-closet trap, particularly when separately trapped and vented.
18. Trapping connection for hot water from side coupling for boiler with water-back.
19. In not enlarging hot-water pipe to desired size, and in making wrong connection between the water-back and range.
20. Running "circulation" pipe so as to form a trap or traps thereon.
21. Connecting the inside and outside of a double boiler with one connection to the water-back of the range.
22. Connecting the sediment-pipe of double boiler in such a manner as to render it possible to empty the inside before the outside boiler.
23. Neglecting to put in expansion-pipes or vacuum-valves where valve couplings are used on boilers.
24. Running the water-pipes without sufficient grade to empty them.
25. Putting up hot-water pipes without allowing for expansion, and having straight branches from hot-water pipes.
26. Using lead pipes for hot water where hot water is heated from a steam-supplied tank.
27. Using lead for lining tanks for storage for domestic purposes.
28. Using impure lead, such as old joints, &c., for calking joints.
29. Putting supply and waste pipes in in-

accessible and undesirable locations where they are liable to freeze, and not sufficiently protecting them.

30. Connecting directly on supply pipe the valves of waterclosets.
31. Allowing raspings and filings to fall into pipes.
32. Taking keys out of ground key-cocks for the purpose of wiping them in.
33. Supplying bath-tubs from the bottom, thereby endangering the fouling of supply-pipes on lower storeys by siphonage.
34. Putting in mains in a street without allowing for settlement and without properly blocking up under the tap.
35. Using pipe-hooks instead of metal racks and screws for supporting pipes in recesses or along ceilings.
36. Making joints with soldering-iron in place of wiping where required.
37. Using tin-lined pipe for hot water.
38. Not using a boiler of a size proportioned to that of the range; also using ranges with small water-backs.
39. Omitting to close terminations of soil and waste-pipes; also the ends of croton or supply-pipes which are likely to be obstructed.

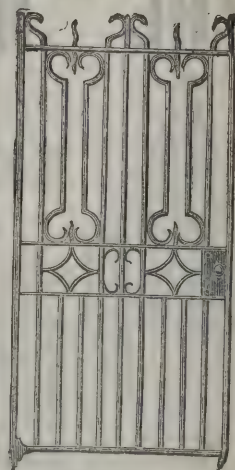
**CLERKS OF WORKS ASSOCIATION.**

A LARGELY attended monthly meeting of the members of the above association was held on the 4th inst. The president, Mr. E. Moore, in his address made the following remarks:—We have now entered upon the fourth year of our existence, and have shaken off, so to speak, the swaddling-clothes of infancy. We have arrived at that period in which it behoves us to take steps forward with courage not unmixed with caution and prudence, or, as our American cousins put it, first be sure you're right, then go ahead, our constant aim and watchword being proficiency and progress. Speaking for myself, I confess that I look back on the past year with almost unmixed pleasure. There has been a steady increase of members, which we have reason to hope will continue. Our journal

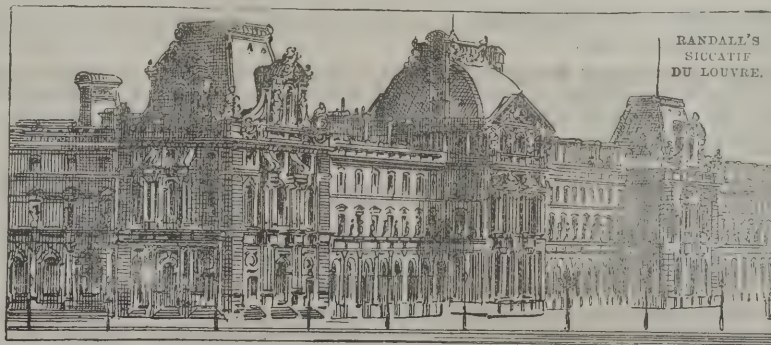
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also has done, and I trust will do, great things towards bringing the association prominently to the notice of all leading architects and surveyors. Again, the isolated position formerly occupied by the clerk of works has become a thing of the past. Instead of being scattered, and comparatively unknown to each other, we are, by means of this association, drawn and linked together by ties of fellowship and good feeling, and as years roll on we shall, as we watch its progress, esteem and love this institution increasingly. A certain result of a body of men united in one common calling, whose aims and aspirations are essentially alike, must be social intercourse, mutual professional assistance and benefit individually, and the progress of the association generally. Having sketched a few of the benefits already conferred upon us by this association, let us pause to consider one other point in connection with which it appears to me that our success has not been quite so gratifying as I could wish. I distinctly remember when the rules of this association were being drawn up, that our chief object was so to frame them as to insure that every member enrolled should be a *bonâ fide* and thoroughly competent clerk of works. It was ably argued, and to my mind conclusively shown, by gentlemen then present, that by adopting this course we should at once start the association on a sound basis, and as a result not fail to secure the co-operation and assistance of architects generally. Our sanguine expectations in this direction have not up to the present been so fully realised as I could wish. We certainly have occasionally received good wishes and encouraging remarks and comments from some eminent architects, which have had their due effect in stimulating us to greater exertions. We have also received applications for the services of clerks of works from some few architects, which were promptly and satisfactorily responded to. But these must be not merely more frequent, but, to satisfy me, they must be continuous. The association must eventually be the one source from which architects seek their practical superintendents of works. Architects and professional men generally must be made to under-

stand that this institution undertakes the fulfilment of their constant and most important and pressing requirements. Their attention must be constantly drawn to the fact that the members of this association consider the interests of architects to be identical with their own. Seeing that it exists for the purpose of increasing the practical as well as the theoretical knowledge of its members, how could it be otherwise? Why, then, have we not yet fully realised our hopes in this direction? It strikes me that the answer must be that we have perhaps been a little too apathetic upon this matter, very zealous in social intercourse amongst ourselves, anxious certainly in all directions to increase our stock of knowledge, and perhaps our zeal in this direction has caused us for the moment to lose sight of the fact that we are in a great measure leaving architects to themselves. Do architects as a rule yet realise the fact that this association consists of the most experienced men of their class, who meet together for the purpose of acquiring additional professional knowledge and intellectual improvement by the reading of technical papers and general discussions thereon, and that the benefits derived therefrom must of necessity be shared more or less by them? Let them but become fully acquainted with this fact, and surely it must follow that our connection with them will soon be largely increased. Any address from this chair would be incomplete if it omitted to mention the debt of gratitude we owe to Mr. John Oldrid Scott for his liberality and many kindnesses bestowed upon us from the first. Particularly must be mentioned his gift of the free use of this office for our business purposes, which to us has been truly a gift of very great importance. I consider also that his kindness and patronage have in no small way contributed to our attaining our present position, and I am sure I only echo the sentiments of every member of this association when I say that his name will ever be remembered by us all with lasting esteem and gratitude. In conclusion, I will only add, let us each continue our best endeavours to further the interests of the

association by every legitimate and honourable means. It would not, I think, be asking too much from such a body of men as ourselves that a paper should be read at each of our monthly meetings, not necessarily long, but certainly a practical one. This, I think, would be one step in the right direction. Let all our discussions be free from discord, perfect harmony prevailing in our united efforts to bring the association into its future prominent position; and when the time arrives for me to relinquish the duties that now devolve upon me, I trust that in passing them into other and abler hands I shall be in a position to say that the year during which it has been my privilege to occupy this chair has witnessed a larger share of success than has hitherto been attained, especially in the direction which I have more particularly dwelt upon.

### IS A COURTYARD A SPACE?

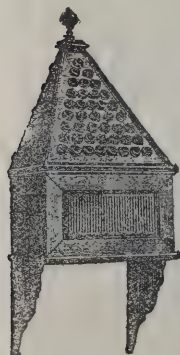
ON Saturday Messrs. Mowlem & Co., the contractors, were summoned before Mr. d'Eyncourt by the Metropolitan Board of Works for various offences under the Metropolis Management and Building Acts, such as forming or laying out a road, passage, or way leading out of the King's Road, Chelsea, as a street for the purpose of foot traffic only, and so as not to afford direct communication between two streets; building "as a street" for foot traffic only, without the sanction of the Metropolitan Board of Works; building a street for foot traffic of less width than 20 feet, and constructing it without being open at both ends from the ground upwards. The whole of the works are in connection with a block of dwellings for the industrial classes. At the back of the premises is an open yard, about 60 feet wide and 75 feet long, and this is approached from the main road by an archway 12 feet 6 inches wide and 10 feet high, of sufficient dimensions to allow of the passage of a carriage or coal wagon. The passage-way was stated to be 27 feet long. On the north side of the yard is a block of six dwellings; on the east and west sides are small two-storey houses,

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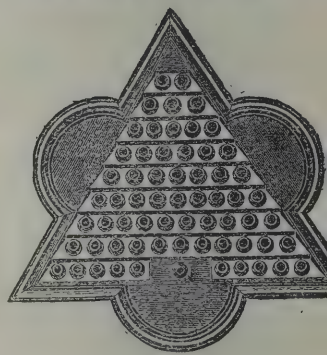


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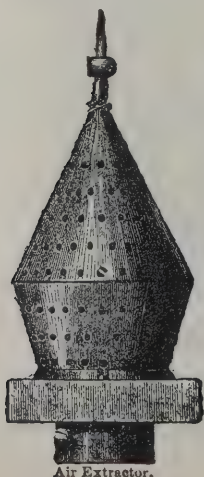
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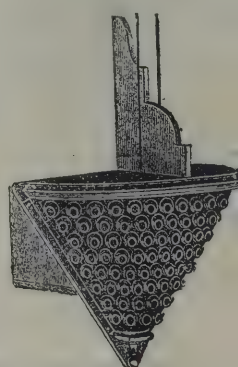
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and foundations of outbuildings. All the dwellings are built to accommodate several families, and the upper storeys are approached by a gallery after the manner of the Peabody buildings. The backs open into the courtyard, and there is no other exit from the square except the passage-way into the King's Road. Application had been made to the Metropolitan Board to sanction the arrangements, but was subsequently withdrawn on the ground that it was not legally needed. Mr. Avory said the proceedings had been taken by the Board solely because in their public capacity they were unable to make exceptions in favour of individuals, however worthy their objects might be. Mr. d'Eyncourt asked how anyone could be prejudiced by such a construction as the defendants were making. Mr. Avory said the 7th section of the Act of 1882 gave the Metropolitan Board powers to prohibit the formation of a *cul de sac*. Another mischief to be guarded against was the obstruction of public traffic. It was here proposed to close the archway at night with a gate, and in case of fire there was likely to be danger; the engines might be stopped by the gate, which was locked at night. A very similar case to the one at issue had been decided in favour of the Board at Lambeth Police-court, and on appeal to the Quarter Sessions the decision was upheld. It was to be regretted that the case was not taken to the High Court, and the point definitely settled. Mr. d'Eyncourt suggested the case of Burlington House as analogous to the matter at issue. Mr. Avory thought every case should depend absolutely on its own merits. The word "street" throughout all the Acts had a very wide interpretation. There was nothing limiting it to be a public thoroughfare or highway. It included even a mews, and why should it not therefore include a place like that built by the defendants? No doubt the courtway was now in the hands of a company who would well look after it; but it might not always be in such good hands. Fourteen separate dwellings for one hundred and twenty people were to be erected, and the Metropolitan Board were bound to maintain their right of jurisdiction in the interest of the

public. Mr. Cripps for the defendants said they were not laying out a new street. It was originally a block known as Park Terrace Cottages, and now the site was simply utilised for better dwellings. The managers of the buildings considered that their privacy was of essential importance. If the place was a public street, and left open at night, the balconies, &c., would become the refuge of tramps and vagrants. The place was no more a public street than Furnival's Inn, Barnard's Inn, or Staples Inn. The first Metropolitan Local Management Act dealt especially with the regulation of buildings where there had been buildings before, and no power was given to the Metropolitan Board to interfere with existing property rights. His contention was that the Metropolis Management Act of 1882 merely had reference to questions of new streets. Here there was no intention to make a new street. Evidence was given that the buildings were to be managed on Miss Octavia Hill's system. A gate would be closed at night, all the tenants having keys, and the courtyard was to be laid out as a garden, with seats. Privacy was considered essential, although there would be nothing to prevent the public access to the courtyard in the daytime. Mr. d'Eyncourt reserved his judgment.

#### REPAIRS OF DRAINS.

THE decision given by the Court of Appeal in *Hugall v. M'Kean* on the 1st inst. is of importance to the owners of houses, as it confirms the necessity of special notice from tenants, before responsibility for defective drains devolves on landlords. The plaintiff is proprietor of a ladies' school at Blackheath, and in August 1882 agreed to take a house for three years from the defendant (a receiver under the Court of Chancery), who covenanted to keep the drains and sewers in good tenantable repair and condition during the tenancy. The defendant expended 50% in repairs in accordance with a term in the agreement. On June 18, 1883, the basement was suddenly flooded with sewage which forced

itself up the traps. The plaintiff immediately called in a sanitary engineer, who found the drains in a defective and dilapidated state. Among other defects a 4-inch pipe was connected without any cement with a 9-inch pipe, leading from a cesspool, and the sewage was oozing from the joints; also the soil-pipe passing through the house was corroded and leaking with sewage. It was alleged that the flooding was due to the pressure from the cesspool. The plaintiff, without notice to the defendant, immediately did the necessary repairs, and sought to recover the cost (50%) from the defendant. The defence was that the plaintiff should have given notice to the Court of Chancery of the want of repairs, and the Chief Clerk said he was unable to allow anything which was not legally due. It also appeared that the plaintiff paid the midsummer's rent without any complaint, and that no notice was given to the defendant until September. At the trial before Mr. Justice Wills, the jury found that the plaintiff did not know, and had not the means of knowing, that the drains were in a bad condition prior to June 18, 1883; that the defendant did not know, but had the means of knowing, that the drains were in a bad condition prior to that date. On those findings Mr. Justice Wills entered judgment for the defendant, whereupon the plaintiff appealed.

The Master of the Rolls, in dismissing the appeal, said that the terms of the covenant were substantially the same as those construed in "*Makin v. Watkinson*" (L. R. 6, Ex. 25). The effect of that decision was that into such a covenant there should be imported the condition that the landlord shall have notice of the want of repairs before he can be called on under the covenant to make it good. But the plaintiff could not say that the landlord had such notice. In the circumstances his lordship thought that the case was hard on the plaintiff; but it was not cruel, because the Court of Chancery had to consider the rights of the other persons interested in the administration action. Their lordships must abide by the law, and say that the judgment should be affirmed.

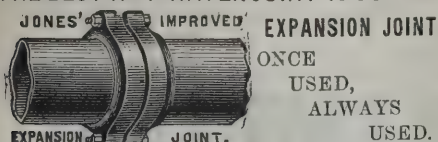
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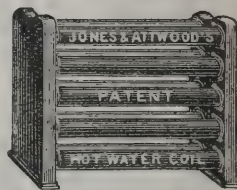
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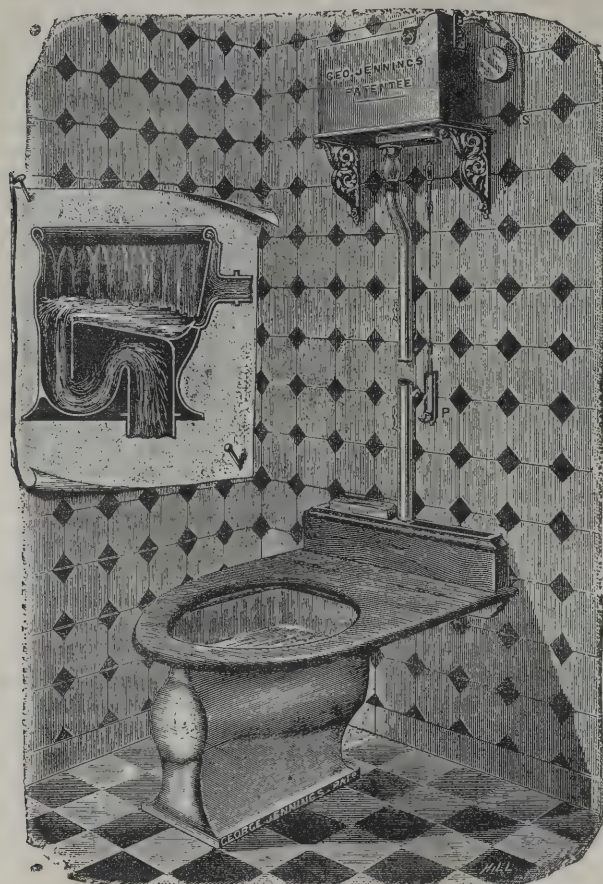
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The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and successfully witnessed by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with **"JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN"** 5 feet over, with  $1\frac{1}{4}$  inch down pipe, ten apples (averaging  $1\frac{1}{4}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

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# The Architect.

## THE WEEK.

THE Metropolitan Board of Works may shortly be called upon to approve of a building alteration, to which no other name than vandalism can be applied. Everyone knows that one of the best examples of Modern Renaissance in London is the Junior Athenæum Club, in Piccadilly. It was originally a private residence, and it is one of the few buildings in which the smallest details have been worked out according to the architect's plans. It has, therefore, exceptional unity, and cannot be tampered with any more than a piece of sculpture. In every club there are discontented members who are eager to make alterations. The gentlemen who represent that class in the Junior Athenæum propose to transform the Piccadilly front of the building by altering the levels of the windows of the principal floor, and cutting a doorway in the wall. What is more extraordinary still, there are architects who are willing to draw plans for the work. In a club bearing so honoured a name, we might expect a little appreciation of architecture. The plans will have to be submitted to the Metropolitan Board, and we hope the application for the alterations may figure among those which have been "refused."

THE Royal Institute of Painters in Water-Colours has been strengthened by the election of Messrs. W. H. WEATHERHEAD, H. CAFFIERI, JOHN SCOTT, and THOMAS PAYNE. On Tuesday Mr. E. BLAIR LEIGHTON and Mr. HENRY ROBERTSON were elected members of the Dudley Gallery Art Society.

THE following competitions have been decided. The plans of Messrs. OSWALD & SON, of Newcastle-on-Tyne, are adopted for the extensive additions to the local co-operative stores, which will include stabling, abattoir, &c., and for laying out the land adjoining in building sites. The restoration of the church of St. George, Stalybridge, will be carried out according to the designs of Mr. JOHN LOWE, F.R.I.B.A., of Manchester. Mr. ALBERT VICARS, Architect, Somerset Chambers, 151 Strand, London, is preparing the design for St. Hugh's Roman Catholic Church, Lincoln, and presbytery. The whole cost of building, we understand, will be the gift of the right worshipful the Mayor of Lincoln, Mr. F. J. CLARKE, J.P. The plans of Mr. HERBERT GREEN, of Norwich, have been adopted for the restoration of Coombs parish church.

THE seventieth Anniversary Dinner of the friends of the Artists' General Benevolent Institution took place on Wednesday, in Prince's Hall, Piccadilly, about two hundred gentlemen being present. The chair was occupied by Mr. W. H. SMITH, M.P., who was supported by Colonel KING-HARMAN, Mr. FRITH, R.A., Mr. POYNTER, R.A., Mr. MACWHIRTER, Mr. MARCUS STONE, A.R.A., Mr. A. CROW, A.R.A., Mr. J. C. HORSLEY, R.A., Mr. C. T. NEWTON, Mr. J. ANDERSON ROSE, Mr. ALMA TADEMA, R.A., Mr. J. AIRD, Mr. FRANK HOLL, R.A., Mr. H. HERKOMER, A.R.A., Mr. C. B. BIRCH, A.R.A., Mr. B. W. LEADER, A.R.A., and Mr. GREGORY, M.P. The Chairman proposed "Success to the Institution," which was warmly received; after which he proposed that of "The Royal Academy," to which Mr. HORSLEY replied. Mr. HORSLEY proposed "The Royal Society of Painters in Water-Colours," coupled with the name of Mr. COLLINGWOOD SMITH. After several other toasts had been proposed, the Treasurer read a list of subscriptions amounting to 1,956*l.*, in addition to a legacy of 500*l.* by Mr. J. J. JENKINS, member of the Royal Society of Painters in Water-Colours.

THE Institute Library is very valuable, but it has not been sufficiently utilised hitherto. Some of the members have desired to make its advantages better known, but the Library Committee have not seconded them. The initiative towards improvement is mainly owing to Mr. RALPH NEVILL, F.S.A., who, in a letter we have received from him, says:—"I see by the Institute Transactions that at the

general meeting Mr. WYATT PAPWORTH confidently challenged Mr. RIDGE to name a library where the books were left accessible to the readers. This was rather rash, seeing that almost within a stone's throw stands the library of the Society of Antiquaries, where the books are so left open. It is, perhaps, familiarity with the practice there that has rendered me, for one, intolerant of the somewhat pedagogic plan at Conduit Street. The two institutions are otherwise very much alike. In both cases the books are of extra value, in both the number of readers is limited, and in both the room is small enough to be well under the eye of the librarian. This latter gentleman at Burlington House is also ready to get any book a member may want. We hear now that the books are all press-marked. What, then, becomes of the piteous complaint of the librarian that he sometimes cannot remember where his own books are?"

A HANDSOME gift has been intimated to the Scottish burgh of Alloa by Mr. JOHN THOMSON PATON, of Norwood, who offers to build a handsome public hall capable of accommodating 1,000 persons, and also rooms suitable for a library, and give 1,000*l.* towards the purchase of books for the library, on condition that the burgh adopts the Libraries' Act. If this is done, Mr. PATON is prepared to carry out his intentions, and hand the whole over to the Burgh Commissioners for the benefit of the town.

THE United Presbyterian Synod have resolved to raise 20,000*l.* to assist in the erection of suitable buildings for new congregations, or in providing permanent buildings for congregations, which have as yet erected only temporary structures, in the rebuilding or enlarging of existing churches where additional accommodation has become necessary, and in providing accommodation for new stations which may ultimately become congregations. On Tuesday last the final arrangements respecting the project were entered into at the meeting in Edinburgh.

THE admirable book on ornament which Mr. OWEN W. DAVIS has been preparing is now ready for subscribers. From the author's experience in designing, we have a right to expect much, and we have not been disappointed. There are eighty-five plates, in which types are given of almost all styles, from ancient Egyptian to our own times. Mr. DAVIS, like all professional designers, cannot confine himself to a single style, and has to produce work that will correspond with the variations of fashion. His versatility is remarkable, although, from the fact that he loyally gave his aid to the late Sir DIGBY WYATT, he appears to have a preference for Italian and the allied styles. The work is pre-eminently suggestive, and has been prepared with an eye to utility rather than pictorial effect. It merits a wide circulation.

THE following extract on sketching from the preliminary students' chapter will suggest the genial way in which Mr. DAVIS treats his subject:—"Our first injunction is, 'begin your subject somewhat smaller than you intend it to be when actually finished. Remember always to do the simple work first, for thus the more difficult will, in its turn, gradually become the more easy; whereas if you tackle the giant first, your strength will be soon exhausted, and the simpler portions will consequently appear the more formidable. Try to draw without outlines: get, in the first instance, an impressional idea of what you require in light and shade, then mass your work up, and carefully fill in the details. Think carefully over your commencement, for be sure you begin well; a good start is half the battle gained. The first quarter of an hour's work may be good or bad for you, and so decide the fate of your drawing. In sketching it is generally found that the first stage is nervous, and the second irksome, whereas the third generally atones for the other two inconveniences. Looking thoughtfully at an object, and afterwards sketching its several features from memory, will do more, maybe, to impress the salient points of it on the mind than would an elaborate drawing made at leisure in front of the object itself. A more vivid impression of a subject is often retained when we are not permitted to sketch it, and, doubtlessly, many an artist has experienced the same visual retentiveness." Suggestions of this kind are precisely those most needed by beginners.



## THE HOUSING OF THE WORKING CLASSES.

THE report of the Royal Commission on the Housing of the Working Classes, which has been so eagerly desired, has at length appeared. The difficulty that awaits a settlement may be described as colossal, and it was requisite that a strong commission should be elected to undertake what are only the preliminary operations in the case. When it is remembered that for the last twelve months Sir CHARLES DILKE, the Prince of WALES, Cardinal MANNING, the Marquis of SALISBURY, Earl BROWNLOW, Lord CARRINGTON, Mr. GOSCHEN, Sir RICHARD CROSS, the Bishop of BEDFORD, Mr. E. LYULPH STANLEY, Mr. W. M. TORRENS, Mr. H. BROADHURST, Mr. JESSE COLLINGS, Mr. GEORGE GODWIN, Mr. SAMUEL MORLEY, the Lord Provost of Edinburgh, and Mr. E. DWYER GRAY, have been closely occupied in investigations, the extent of the subject may be conceived, and it is so manifold in its relations we are surprised to find the first report forthcoming in so short a time. What a blessing it would be if the remedial measures could be accomplished not in one year but in twenty!

The condition of the houses of the working classes in English towns has been so often described, and is so apparent, it may seem a waste of labour to seek more "correct information" than heretofore existed. It must be said that the Commissioners have been unable to add much to what was already known. The advantage of the Commission as we take it is that an official stamp has been placed upon statements respecting overcrowding, sanitary defects, the rapacity of landlords and middlemen, the indifference of local authorities, and other evils, and in consequence they can no longer be impugned. It will be rash for any man to say now that the condition of the humbler classes in English towns is not so dreary as it has been represented.

It is not easy to define the classes of the population which are comprised in the term "working classes." If the wage test be applied, it is found that the dock labourers earn about 8s. to 9s. a week, costermongers and hawkers gain 10s. to 12s. a week, and the average of labourers' wages in Clerkenwell is about 16s. a week. An inquiry was made among workmen in one hundred different trades or callings who lived in the district between Golden Lane and Whitecross Street, and 20s. a week represented the average. It can only be by great self-denial that poor people who have no higher income can pay rent at all. But the extent to which they are mulcted will be apparent from an investigation by one of the inspectors of the London School Board in 1,000 dwellings. He found that 88 per cent. of the humbler classes pay more than one-fifth of their income in rent; 46 per cent. pay from one-fourth to one-half; 42 per cent. pay from one-fourth to one-fifth; and only 12 per cent. pay less than one-fifth of their weekly wages. The average rent of a single room was found to be 3s. 10<sup>3</sup>/<sub>4</sub>d.; of two rooms, 6s.; and of three rooms, 7s. 5<sup>1</sup>/<sub>4</sub>d. Higher prices are obtainable in several parts of the metropolis. The necessity for men to be close to their work compels them to pay far beyond the value of the rooms. Dock labourers congregate in one place, costermongers in a second, artisans following particular trades in a third. Thus, for example, it has been explained that the apparatus required by operative watchmakers is so expensive that no man can afford to have the whole of it: one borrows a part from another workman, and in the course of a day a man may have to borrow three or four times.

The overcrowding which is inevitable from the eagerness to be close to employment has been increased to a terrible extent by the demolitions which have been carried out during late years. If the people had been only driven backwards, like the red men, it might be said that they were merely subjected to a law of our times, but the necessity for their presence remains as before. No one cares where they may sleep or rest, or whether men or women have walked two miles or two yards, so long as they are at work at the prescribed time, or duly return the articles which have been entrusted to them.

It sometimes happens that Royal Commissions deal with questions which are only partially connected with finance. But in this case everything turns on money. It is impossible to provide better or more convenient dwell-

ings for the humbler classes unless by the expenditure of enormous sums, and how are they to be provided? The Commissioners have apparently paid little attention to estimates of works, and are only able to speak in a general way when they have to deal with the outlay that their recommendations involve. Mr. DWYER GRAY quotes an article which was written by the President of the Board of Trade in 1883, in which it is affirmed that "the expense of making towns habitable for the toilers who dwell in them must be thrown on the land which their toil makes valuable, and that without any effort on the part of the owners." Mr. JESSE COLLINGS apparently takes a similar view, for he says that "it should be a recommendation therefore that landowners should be required by law, due notice having been given of a deficiency, to provide sufficient and suitable dwelling accommodation on their estates under laws and regulations to be enforced by local authorities," and he approves of Captain DE WINTON's recommendation that "a man who did not put up two decent cottages for every acre of land he owned should be taxed for the omission." We have nothing to do with the merits of the political revolution that is implied in such a short and ready way of getting out of the difficulty, but if we take the surveyor's standpoint, and judge of the suggestion, we can only say that at present it is impracticable. Landowners are not in a position to adopt so exalted a theory of their duty, and, owing to the complicated organisation of society, it is doubtful whether they can ever be otherwise. One of their difficulties is indicated from what was said by Lord WILLIAM COMPTON. He found that an intermediate on the Northampton estate was receiving 100l. a year from a house in Clerkenwell, for which 20l. a year was paid. But his lordship stated that he shrank from calling the middleman to account for neglecting to repair the tenements, fearing that a rise in rents would be the consequence. This may seem no more than a lack of moral courage, but, whatever it may be called, it is a sample of impediments which, however simple in appearance, cannot readily be cleared away.

The Commissioners recommend that existing legislation should be enforced, and, where necessary, that it should be extended. But regulations for the prevention of overcrowding are in their way as oppressive to the poor as the demolitions have been. Families can be turned adrift from a house which contains the regulation number of inhabitants, but where are they to go? It is admitted by the Commissioners that in the country the wages of agricultural labourers are too low to enable a builder to provide accommodation at a remunerative rate, and it is even harder in the Metropolis. The model dwellings, on which 12,000,000l. have been expended, are not intended for the costermongers, dock labourers, and the lower strata of the wage-earners. All things considered, they are cheaply constructed, and the rents are low, but the opinions concerning the utility of large blocks of buildings are so divergent that the Commissioners seem to be unable to approve or condemn them. However much the projectors may lower their demands, they will not meet the means of the residuum of the population. The Duke of WESTMINSTER let the site for the Gatliff Buildings at the lowest possible rent, and advanced the money for the erection at three per cent., on the condition that the buildings should be available for the very poor. But the Commissioners decline to say whether the rents are at a rate which would put the dwellings within reach of the most necessitous class.

It is to be feared that the class referred to cannot hope to inhabit new buildings unless the proprietors or the State are prepared for financial losses. The best means to evade the difficulty appears to be the adoption of TORRENS's Act, which has never been sufficiently tested. Among the causes which have left it to be so unused are the cumbrous preliminaries which are demanded before it can be set in motion. At present a writ of mandamus from the High Court must be obtained. The Commissioners propose that the order or direction of the Home Secretary should be enforceable by an order of the Court instead of by mandamus. In connection with this part of the subject the separate report by the Hon. LYULPH STANLEY and Mr. STANLEY is of very great importance.

One remarkable suggestion is offered by the Commissioners. They ascertained that forty-five acres of ground are occupied



in London with four prisons, Coldbath Fields having nine, Pentonville ten, Millbank twenty-three, and Fulham three and a half. The last is the only one which is not situated in a densely-populated district. The Commissioners propose that the sites of the remaining three "should be conveyed to the Metropolitan Board of Works, in trust for the benefit of those portions of the town which are most overcrowded." But it is expected that the Government will set the example of sacrificing property, for we are told that "in fixing the price at which the sites should be so conveyed, due regard should be had to the purposes for which they are so required." The Marquis of SALISBURY recommends that the sites should be sold at the prices given for them originally, on the ground that it is to the circumstance of London being the seat of Government that the increase of population and the diminution of house room are mainly owing. His lordship recommends that the dwellings to be erected should be of a lower standard than those of the PEABODY Trust. The suggestion manifests the great difficulty of finding sites within the Metropolis for the dwellings, and the necessity for exceptional measures sooner or later. But if the precedent is once set of paying only cost price to owners, there is no knowing where it will end, and thus "prairie value" for London land may one day be the recognised standard when a building site has to be taken for quasi-public use.

In the report the Commissioners are severe upon surveyors, who, not being sufficiently advanced in their political economy, endeavour to obtain the full measure of value for their clients' property. Mr. SHAW-LEFEVRE stated that 400,000*l.* out of 1,100,000*l.*, which was lost by the Metropolitan Board of Works on improvement schemes, was a result of excessive valuation. Mr. CHAMBERLAIN in describing the Birmingham clearances strongly objected to the principle laid down by Sir HENRY HUNT, the arbitrator, by which they were forced to purchase temporary interests which involved the necessity of giving compensation for businesses in connection with them. It is proposed that the "fair market value," and no more, should henceforth be given to the owners of property that may have to be taken, and that excessive assessment of trade profits should be ignored. The emoluments of lawyers and surveyors are to be checked by fixing a scale of professional charges, and as appeals have no other use except the increase of fees, they are to be abolished unless special permission can be obtained from a superior Court. In other words, the spirit of self-sacrifice is to be enforced all round under pains and penalties. In ordinary cases a valuer is expected to recognise all contingent improvements, and the value of ground has in this way been increased fivefold, and yet at the higher price it was sold cheap. But the Commissioners believe that if a place is of a low value it must remain so. "There are arbitrators," the report says, "who seem not to exclude from their minds the improvement of the property that would be due to the scheme itself, and give a prospective value to the unhealthy property in consequence of their impression that it would be increased in value when the improvement was effected." This may seem an unfair way of going to work to people who wish to buy property at their own price, which is the position assumed by the Commissioners, but the assumption of prospective improvement is every day practised in Court. A corresponding principle is adopted by landowners when they are fixing the rent of property, and introduce the worth of a tenant's improvements as factors in the calculation. We are astonished to find Mr. GEORGE GODWIN could allow statements to go forth like those in the report about surveyors without making an effort to qualify them.

Surveyors are supposed to derive great profits from all cases relating to the purchase of property for improvements, but as a matter of fact their fees are moderate and are dearly earned. The lawyers draw large sums. Thus, a sum of 10,000*l.* was paid for legal expenses, in Liverpool, in respect of compensations amounting to 72,000*l.*, and one case was mentioned where the value of the house was 20*l.*, and the solicitor's charges amounted to 57*l.* But a similar costliness was found to prevail in transactions which did not relate to sanitary improvements. A land company bought twenty-seven plots of market garden, each of which was worth 4*l.* 8*s.* 4*d.* The legal expenses amounted to 14*l.* per plot, although there was no difficulty

with the title. A workman stated that he gave 220*l.* for his cottage and 66*l.* for the deed. But what is to be done in such cases? The Commissioners are unable to suggest a remedy unless there is a "reform of the law," and that we do not expect until the millenium.

There is a supplementary report signed by ten out of the sixteen Commissioners, which has a more extensive application than the general report. It says that "the prevailing system of building leases is conducive to bad building, to deterioration of property towards the close of the lease, and to a want of interest on the part of the occupier in the house he inhabits; and that legislation favourable to the acquisition on equitable terms of the freehold interest on the part of the leaseholder would conduce greatly to the improvement of the dwellings of the people of this country." With this opinion all readers of *The Architect* are likely to agree, and they could cite many cases in support of it. Would it not be well for the Legislature to try the effect of more facility in converting leaseholds into freeholds?

Mr. GODWIN has a memorandum recommending his favourite material concrete in the walls of houses for the poor. But although indispensable in the interiors of model dwellings, we believe it has not once been used for the external walls of those dwellings. There is also a reference to the Familistère established by a manufacturer of stoves at Guise, in which 700 or 800 workmen and their families are housed at very low rents. Thus a furnished room costs 6*s.* 8*d.* a month, one unfurnished 3*s.* 9*d.*, and a bed in a dormitory can be had for a penny a night. Yet the proprietor is said to derive 6 per cent. on his outlay.

#### PREHISTORIC AMERICA.\*

THE word "prehistoric" is one of the vaguest in any language; for, since it is difficult to define what history means, or to say when one was first produced, the termination of prehistoric years cannot be fixed, much less their commencement. What it may be taken as implying is an answer to the question, When did men first appear on the globe? As geological time is measurable by strata, we may ask, in other words, How far downwards must we go to lose all trace of the species? They are difficult questions to answer, and in many parts of the world there are enthusiasts who are labouring hard for solutions. The authority of CUVIER, who pooh-poohed the notion that men could live amongst extinct animals, for a while retarded the inquiry, and since his time prejudice tried to take his place; but it has been found impossible to put a stop to research. No branch of the science of archæology can display such strong evidence of enthusiastic research as that which relates to the earliest existence of man.

Many reasons combine to make America a favourite hunting-ground for explorers of the science. In the first place, a large part of the Continent has been less subjected than Europe to alterations at the hands of the inhabitants, and, consequently, the worth of evidence is less likely to be impugned on frivolous grounds, although the amusing nonsense which Mr. BRET HARTE wrote about WHITNEY's discovery of the "Calaveras skull" is enough to show that anthropologists are not secure from derision in the States. In the second place, there is a nearer approach to completeness in the evidence than we have in Europe. The Indians of the present day correspond, in respect of customs and works, with the records which are furnished by Peruvian and other remains, and we can trace (allowing, of course, for many links in the chain not being forthcoming) the relation of living people to those of a primitive age.

The book of the Marquis DE NADAILLAC, of which a translation has been published in London, contains an account of the researches and discoveries in the Western Continent. It is all the more valuable because the author believes that, with a subject so extensive, and about which so little is known in proportion to the extent, it is premature to draw conclusions. M. D'ANVERS, in his translation, has had the advantage of Professor ROGER SMITH's aid in the description of architectural remains. The volume has

\* *Prehistoric America*. By the Marquis de Nadaillac. Translated by M. N. d'Anvers. John Murray.



accordingly a claim to be read by others besides anthropologists. It is interesting in its way, but the illustrations, which are mainly taken from American blocks, have not the finish that characterises those ordinarily found in books which are issued from Albemarle Street.

According to Professor WHITNEY there is safety in declaring that the human race in America is at least of as ancient a date as that of the European pliocene. Another authority, who based his calculations on the growth of forests, says that one skeleton must have been lying in the ground for 57,000 years. With the same data a Dr. DOWLER gives the time as 14,400 years. But questions of the kind depend on the more or less rapidity with which geological operations have been conducted, and as it is difficult to form a standard that will serve as an unit of measure, discrepancies must arise in the calculations, and it would be vain to attempt their reconciliation.

There is another factor besides time, and that is race. Leaving the consideration of skulls and other bones to anatomists and geologists, we have evidence in the form of kitchen middens and clay mounds which are the legacy of primitive inhabitants, although belonging apparently to a much nearer age. They testify to many of the characteristics which are still found in existing races. It is evidence that cannibalism (which may have been a relic of Polynesian ancestry) prevailed to an enormous extent. But, as the author says when describing the remains on the Suguassu River, "the cannibalism of these ancient inhabitants of Brazil need not surprise us, for at the present day there are in this empire, so advanced in many respects, cannibal tribes numbering altogether no less than 70,000 or 80,000 souls." Mounds of various forms are found in many parts of the Continent. They are not laid out on uniform plans. Some are circular, others are triangular, but the primitive VAUBANS often gratified their artistic instincts by arranging the earth in the forms of birds, animals, and even of men. The number will be suggested by a few figures. Ohio is said to contain 10,000 mounds, and in the state of New York 250 enclosures have survived. The execution is considered remarkable, especially if it is remembered that the men who constructed the mounds were without the assistance of beasts of burden to carry materials from a distance. The mounds have been divided by SQUIER into six classes, viz., defences, sacred enclosures, temples, altar mounds, sepulchral mounds, and mounds representing animals. It has been supposed that they were not constructed merely for temporary purposes, and the Indians have apparently adopted them as models. Mr. LUCIEN CARR, who is one of the latest authorities on the subject, believes in the kinship between those old builders and the races that give so much trouble to the United States Government. "We are fully justified," he says, "in claiming that the mounds and enclosures of Ohio, like those in New York and the Gulf States, were the work of the Red Indians of historic times or their immediate ancestors. To deny this conclusion, and to accept its alternative, ascribing these remains to a mythical people of a different civilisation, is to reject a simple and satisfactory explanation of a fact in favour of one that is far-fetched and incomplete, and this is neither science nor logic."

When the Spaniards entered the district that is now known as New Mexico they were amazed at the elaborate excavations which had been made in rocks for dwellings, and the structures which were formed wherever the ledges of cliffs gave a footing. These remarkable works are supposed to have been used as refuges in case of invasion, and hence the network of chambers and the almost inaccessibility of the positions. It is, however, noteworthy that in this case also there is a sort of correspondence between past and present. The Moquis and Zuñis now build in a similar style to the Pueblos. Whether made of stone or of adobe, the buildings are alike and regular, with small rooms, trap-doors instead of stairs to give access to apartments, and estufas or common rooms. The pottery corresponds with that made by the cliff-dwellers, as well as the arrows and implements.

In every work which treats of the ruins of Central America we find a reference to the Toltecs, who were supposed to have erected the gigantic buildings of which ruins still remain in Palenque and elsewhere. The origin of the

name is uncertain. M. CHARNAY, who explored the district five years ago, maintains that it is not a name of race, as it is applied "to every ingenious tribe that has left behind it any monumental traces of its presence; in short, *toltec* means builder, architect, engineer." Whoever they were, they held sway in Mexico from 667 until 1051. Palenque is supposed to have been a sort of Mecca, and the only remains are suggestive of palaces and temples. The principal ruin—which was the palace—measures 310 feet by 260 feet, and stands on a pyramidal base 40 feet high. The walls are coated in stucco on both faces and painted. The pilasters are adorned with figures, and there is a vast amount of reliefs throughout the building. Casts of the principal figures are to be seen in the Trocadéro Museum, Paris. M. CHARNAY ascertained that the artists adopted a plan which is often recommended in modern times. The figure was first modelled, and then the garments and ornaments. Every piece of apparel, every article of ornament was moulded and laid on separately.

The subjects of the sculpture and the style varies more or less throughout Central America, but speaking generally, there seems to have been a desire to create figures which might excite terror in the spectators. There are vases and statues besides reliefs, and they could not have been produced without the exercise of extraordinary patience. First of all, we are told, blocks of granite or porphyry had to be quarried with implements formed out of quartz or obsidian, and then sawn into slabs for the reliefs by means of agave-fibre and emery. An outline of the figure was drawn on the stone, and the surrounding parts were removed and the round brought out by chipping with a piece of flint. The plain portions were polished by flat stones or emery. The extent to which picture-writing was used made artists a necessity. An arrow represented an enemy, and the names of places were often symbolised by figures of animals or objects which embodied the idea expressed in the word. As in Egypt then, there were symbolic as well as imitative symbols, and the former are still undecipherable.

There was at one time a tendency when treating of works like those found in Central America to exaggerate their qualities, and to represent them as works of art. Mr. STEPHENS, who may be called the pioneer of Central American exploration, is an example, although in his case the illusion was pardonable. A man who cut his way through the forest was likely to be more impressed with the power of the gigantic figures he found in Copan than a critic who judged it from a distance. Photography and casts have enabled the public to realise the character of the originals, and any value that may be attached to them does not arise from their æsthetic interest, but from the evidence they afford of the history of evolution.

### MOUNTSTUART HOUSE, BUTE.

THE rebuilding of Mountstuart House, which, it will be remembered, was destroyed by fire, has now been completed. This palatial and massive edifice is, says the *Glasgow Herald*, the most magnificent of all the numerous residences of the most noble the Marquis of Bute. It occupies an area of little less than an acre, and is built in the style of architecture which was predominant during the latter half of the thirteenth century. The mansion stands on a layer of concrete, and is five storeys in height, and commands a pleasant view of the river Clyde, with all its favourite summer resorts. The walls, which are of great thickness, as well as the balconies and turrets, are built of stone procured from Corsehill Quarry, near Annan. In the middle a great watch tower rises to the height of 120 feet, with a balcony all round at the top, from which a grand view may be enjoyed.

The basement floor is constructed on fireproof principles. The window sashes are all made of iron, and the ceilings of concrete arching resting on rolled iron beams. The finishing of this floor is in yellow pine, and comprises the business, waiting, and cloak-rooms, wine and beer cellars, breakfast-room, and vaulted chamber, &c. The ceiling of the vaulted chamber is tastefully groined with polished Dunmore stone, having bands of red Corsehill stone every 18 inches; and when the chapel is built there will be a communication between the crypt and this chamber. The ground floor contains a grand hall entirely composed of marble and alabaster—a marvel of the marble-cutter's art. There are several kinds of marble in



its construction, comprising Cipolino, Emperor's Red, Dove, Pavonazetta, Carrara statuary, and Frosterly fossil. The columns on the ground floor are executed with Cipolino, while the four main corner piers are made of Pavonazetta, with small circular Cipolino pillars in the angles. The capitals are all gracefully carved in foliage and animals. There is a gallery and ambulatory all round. The balustrade is made of alabaster, while the plinth supporting same is executed with Frosterly fossil—a marble that is full of shell fossils. The floor is composed of two thicknesses, the lower thickness being of red pine laid diagonally, and the upper one of oak. The columns, piers, and arches are of Pavonazetta, Emperor's Red, Cipolino, Dove, and Carrara statuary. Above the ambulatory comes the clerestory, built partly of stone and marble. Immediately below the clerestory are beautifully carved canopies, executed in alabaster, for the reception of small statuettes. The ceilings of the ambulatory and grand hall are groined in yellow pine, with carved bosses at the intersection of their ribs. To the east side of the grand hall are the drawing-rooms, which are grand and stately in appearance. In the small drawing-room is an angle-nook entirely composed of alabaster and various kinds of marble. The ceilings are exceedingly beautiful, that of the small drawing-room being richly panelled in plaster and French walnut. The fireplaces in these rooms, as well as in all the principal rooms, are entirely made of marble. The doors leading into the balconies are of teak, with the upper half filled in with lattice-work, while the other doors are made of walnut with plain and quatrefoil panels. On the west side of the hall are the dining-rooms. The main dining-room, which measures 45 feet 6 inches by 22 feet 6 inches, is capable of entertaining eighty guests. The ante-dining-room measures 10 feet by 22 feet 6 inches. These magnificent and well-proportioned rooms have the most elaborate tracery-headed windows in the whole building, and are filled in with well-designed lattice-work. The interior finishing is in wainscot. At the south end of the dining-room is a service-room, with dinner lift and hoist. On the north side of the hall is the grand staircase, executed in marble, having a groined ceiling in concrete, and finished with plaster. The ribs are made of Sicilian marble. The ceiling, which is about 40 feet in height, is supported by a marble centre-shaft, from the top of which spring the various ribs forming the ceiling. The steps of the stair are of Carrara statuary. At one end runs a balustrade neatly worked in alabaster and metal. Adjoining the grand staircase are the libraries, which comprise three well-lighted and large-sized rooms. Off the principal library is a strong room and alcove—the former being a stone safe for keeping the archives and records, &c., belonging to the Marquis. Beyond the libraries, to the south, is the nursery hall and vestibule leading to the proposed new conservatory. The ceiling is groined with stone ribs and concrete, and finished with plaster, and is supported by pillars of porphyry—a kind of local granite—having gracefully carved capitals and moulded bases in Corsehill stone. The vestibule is separated from the hall by a stone arcading. The floor of the hall is laid with dark red tiles, while that of the vestibule is executed in mosaic.

On the principal floor are Lord and Lady Bute's private rooms, &c. Lord and Lady Bute's rooms are similar to one another, the bow windows in each having a groined walnut ceiling, along with a neatly-designed marble arcading running parallel with the window. The ceilings of these two rooms are all temporarily finished in yellow pine. Off Lord Bute's room is a conservatory containing two ornamental wrought-iron couples supporting the glass roof. In connection with Lord Bute's room is a small private stair made in the thickness of the wall, and leading to the small drawing-room. The bedrooms on this floor are most capacious, and well finished in wainscot and yellow pine. The doors are of wainscot and walnut, and have a large quatrefoil panel in the upper half, while the lower half is filled in with three sunk moulded and fielded panels. The windows are all of teak. The floors are of American oak. The ceilings are panelled with plaster and yellow pine ribs and mock beams. On the attic floor are the maids' and bachelors' rooms, finished in yellow pine, and both spacious and comfortable. The fireplaces are executed in moulded stonework, with wood jamb mouldings, frieze, and moulded mantel-shelf. The upper attic is entirely devoted to servants' rooms, which are roomy and well supplied with light and heat. Running round the house, on a level with the attic floor, is a verandah, one-half of which is covered. The walls are faced with thin red Chilton's bricks, procured from St. John's, Ipswich, and bedded in Portland cement and Stettin oak framing. The roof of the covered portion is in small panels of Stettin oak, and the rafters project over the eaves with moulded ends. The projecting part of the roof is supported by numerous granite pillars, having moulded Corsehill bases and carved capitals. A charming view of the neighbouring counties can be enjoyed from this verandah. The billiard room is at the south of the building, and immediately over the grand staircase. It measures 33 feet by 27 feet 6 inches, and has two carved antique-looking stone fireplaces, one at each

end of the room. The ceiling is divided into three semi-circular portions, and panelled in wainscot. In the nursery wing are the swimming and Turkish baths. The swimming bath measures about 30 feet by 25 feet, and has a groined roof made of terra-cotta, and supported by Aberdeen granite columns. The floor of the bath slopes so that the water at one end is about 2 feet 6 inches deep, while at the other end it is nearly 7 feet or 8 feet deep. A small dressing-room in connection with the bath is lined with tiles, and groined in the ceiling with terra-cotta. The Turkish baths which adjoin have groined concrete ceilings with stone ribs, supported at regular intervals with stone pillars. Above the swimming and Turkish baths are the nurseries, comprising in all seven rooms. The kitchen offices have all the latest contrivances in the way of cooking. With the exception of the grand staircase, all other stairs are executed in Arbroath stone.

The house is heated by hot-water pipes. All the rooms are lighted with the incandescent lamp, having a luminosity equal to 20 candle-power. The plumbing employed throughout the building is executed in the English style of workmanship, and, like the drainage, has had very careful attention. The water supply is from the new water-works recently made in the moors about two miles distant, and is brought to the house in cast-iron pipes which supply three large-sized storage tanks in the great tower. The bell-hanging is constructed on the electric principle, with all the latest improvements, and embracing ten miles of wire. The glazier work is of the most elaborate description, almost every room having a design of its own. The plans and working drawings were furnished by Mr. R. Rowand Anderson, LL.D., architect, Edinburgh. The house has been supervised by Mr. J. H. White, clerk of works. The contractors for the whole works are Messrs. Watt & Wilson, 93 Hope Street, Glasgow.

## ANCIENT MARBLES

OF the ancient white marbles, the most famous were the Parian and Pentelic of Greece. The Parian marble was obtained from the island of Paros, one of the Cyclades, and was, perhaps, the most highly esteemed of the white marbles known to the ancients. It is not pure white in colour, but is rather of a yellowish tint. In grain it is comparatively coarse, but it worked with great exactness and received the most perfect polish. This it retained even after long exposure; so that the masterpieces of the sculptor's art wrought from it—the *Venus de Medici*, &c.—have come down to us in a state of perfection that is largely due to the indestructible nature of the material of which they are composed.

The Pentelic marble, which divided with Parian the favour of the Greek, is finer grained and whiter than the latter, but it is apparently less durable. As its name indicates, it was taken from the quarries on Mount Pentelicus, in the immediate vicinity of Athens.

With the introduction of Greek art into Rome there was naturally an importation of the material in which this art was embodied in Greece, and the quantity of Greek marbles used in Rome, both for statuary and construction, seem to have been very large, especially during the earlier centuries of the Empire. It was not long, however, after the Italian peninsula had come under Roman sway, before the Italian marbles, now so well known, were discovered and brought into use. Among these the white marbles found on the shore of the Gulf of Spezia early attracted attention, and in the Augustan age the Carrara marble had nearly supplanted the Parian and Pentelic, and the enormous quantity of marble consumed in the decoration of the Imperial City was chiefly supplied from this source. The statuary marble of Carrara combines the good qualities of the two Greek varieties which have been mentioned, though both may be found exactly imitated among specimens of it. On the whole, it is thought by sculptors to combine in a greater degree than any other known statuary marble all the possible excellences of a material of this kind.

Among the famous coloured marbles contained in the Jacobini collection we may mention the following:—

Nero Antico is a jet-black marble of fine and homogeneous grain, and of such closeness of texture that it receives the most brilliant polish. Its colour is also apparently unchangeable, doubtless in virtue of its hardness, since the softer black marbles—which are in fact unmetamorphosed black limestones—lose their colour to a degree on exposure, by the oxidation of the carbon which produces it, and they frequently become quite gray. The antique black marble is now eagerly sought as a ground for mosaics and for other purposes, but this demand is only supplied from the ruins, as the locality of the quarries which furnished it is at present unknown. From its resemblance to the Belgian black, it has been suggested that it might have been derived from the same source; but the comparative abundance of the Nero Antico at Rome and the mag-



nitude of some of the pieces which are still extant, almost preclude the acceptance of the theory.

Rosso Antico was the ancient red marble. Much of this is uniform in colour, and that a rather bright red. In some instances, however, it is darker, and more or less mottled. This seems to have been used by the Etruscans before the advent of the Romans, as beautiful and highly wrought specimens of it were obtained by the writer on the sites of more than one of the Etruscan cities. The place from which the Rosso Antico was derived is not certainly known, though a recent writer claims to have discovered the ancient quarries near the Bay of Scutari, in Greece.

Giallo Antico was the ancient yellow marble. This was perhaps the most admired of all the beautiful marbles used by the luxurious Romans. As its name implies, its prevailing colour is yellow, generally a light tint, somewhat similar to that of the Sienna marble, but more uniform and positive. Other varieties are bright yellow or orange, and it is sometimes variegated with dark lines. This marble is very fine in texture, and takes a beautiful polish. The quarries from which it was obtained are not now known, but it is suspected that they were situated in Africa.

Cipolino is a grey marble, much used by the Romans, and is the material which composes the columns of the temple of Jupiter Serapis at Baia; those which have been perforated by boring mollusks to half their height marking the former submergence of the site of the temple. It is composed of bands or irregular layers of white marble, mixed with others of talcose or steatitic material.

Apparently several distinct varieties of marble are known in Rome under the name of *Pavonazetta*, or peacock marble. In a collection of antique marbles made by the writer many years since in Italy, one of the most beautiful, found in the Forum at Rome, was coloured with white rounded spots on a red ground. This was called *Pavonazetta* by the Italian sculptors; but another, and perhaps the true *Pavonazetta*, is coloured with wavy bands of green, bluish-grey, and white, which form somewhat rounded and highly-coloured figures that bear an imperfect resemblance to those of the peacock's tail. Of this marble many beautiful examples are to be seen in the churches of Rome.

Oriental alabaster is a stalagmitic marble, though generally, but of course incorrectly, called an alabaster. Its prevailing colour is a yellowish white, but it is frequently banded with darker shades of yellow and red. This seems to have been a highly-prized ornamental stone among the ancients, as many specimens of it are found in Egypt, Syria, Greece, and Rome. It was the favourite material for vases, urns, &c., and these are found in the oldest sepulchres, quite a number being contained in the interesting collections made by Colonel di Cesnola on the island of Cyprus, now in the Museum of Arts at New York City. Magnificent slabs and columns of this beautiful stone are to be seen in the churches of Rome, especially in that of San Paolo fuori le Mura. The quarries of the Oriental alabaster are in Egypt. They were for centuries lost sight of, but have been lately rediscovered, and are now worked.

## TESSERÆ.

### Titian and Claude's Landscapes.

SIR C. L. EASTLAKE, P.R.A.

THE simple question, What is the general character of the object to be represented? explains the style of Titian, for he always penetrated it. Many appearances in nature have more than one general characteristic by which they are universally recognised. Thus, while Titian aimed at the quality of depth in the sky, Claude seems to have loved another of its attributes, and reflecting that the sky was the source of light, he seems to have determined that brightness was its universal character. Claude seems to have copied the forms of trees in a relative point of view: their forms assist his composition, and their tone gives brightness to his sky; but Titian always expressed the universal character of a tree, viz., growth. It is always bursting with the efforts of vegetation. The forms are hence often peculiar, and at first one would say that Claude is more general in his choice of trees; but what appears accident in Titian's case is really the character.

### Vignola.

F. MILIZIA.

He was of an agreeable complexion, sincere, prompt to assist others, patient, and cheerful. Architecture is eternally obliged to him—he formed a system and prescribed rules. Convenience, solidity, and all the mechanical parts were well understood by him. He was fertile in invention, elegant in his ornaments, and majestic in his arrangements. As he increased in experience, he improved in the correctness of his profiles.

With the aid of a little philosophy he would have corrected architecture of those abuses which neither his contemporaries nor the ancients had perceived. But the age of philosophy was not yet arrived. His book, therefore, which is the first usually put into the hands of youth, and, like the breviary to a priest, perhaps the only one interesting to architects in their old age, has done more evil than good. Vignola, in order to render his rules more general and more easy in practice, has now and then altered the finest proportions of antiquity. In the divisions of certain members, and in some of his mouldings, he rather inclines to harshness, and, by making his pedestals too high, he takes from the importance of the column. There is no system more easy than that of Vignola, but this facility is procured at the expense of architecture herself. The model for his Doric was the theatre of Marcellus; but finding some of its mouldings not conformable to the proportions he had established, he made no difficulty in accommodating them to his rule. He has taken other parts from various Doric edifices, and united them with those of the theatre of Marcellus.

### English Wall-Painting.

J. G. WALLER.

The colours generally used were of the commonest kind, mostly earths, as in fresco, or of some mineral origin. The chief were colcothar or Indian red, for they are nearly the same, red ochre, yellow ochre, terra verde, verditer, and native cinnabar. Neither of the two last are used in fresco-painting, and verditer—both blue and green—are colours which fade and change very easily. To these may be added "lamp black" and white, made from lime. Cinnabar, which stands in the place of vermilion, grows black in contact with lime, and this accounts for some reds turning quite black, probably assisted by damp. All our earliest paintings are monochromes or very nearly so. As regards the decoration of oaken screens of which the eastern counties show many fine examples, both "tempera" and oil were used. Indeed the latter was very much employed in this country in early times, as our records prove. But it is very doubtful if this was for any delicate work. Many of the screens in Norfolk and Suffolk prove the influence of the Flemish artist, and we know many migrations from Flanders took place, bringing superior manufactures and doubtless a superior art practice. If we presume the use of oil in the painting of these screens, it seems always to have been applied on a ground of gesso, just as in preparation of panels by painters of both Flemish and Italian schools. But we cannot be sure that many which now seem to us as painted in oil were not first executed in tempera, and afterwards varnished. It is, however, of little importance. But there are specimens of tempera simply, as well as in oil or tempera varnished. On the screens we get a superior range of colours: a finer blue, a brighter green, a preparation probably of vermilion. The gilding is excellent, and in one or two instances, late in the fifteenth century, stamped processes are used for such parts as the shafts of the canopy, executed with much beauty and subtlety. Yaxley, Suffolk, offers an example.

### Stained Glass Windows.

E. CHEVREUL.

My ideas on the employment of stained glass for windows may be summed up in the following terms:—(1) they produce their utmost effect only in the rose windows, bay windows, or pointed windows of large Gothic churches; (2) only when they present the strongest harmonies of contrast, not of colourless transparent glass with the black produced by the opacity of the walls, iron bars, and strips of lead, but of this black with the intense tones of red, blue, orange, violet, and yellow; (3) their designs must always be as simple as possible, and admit of the harmonies of contrast; (4) while admiring painted windows, of which a large number consist of paintings of undoubted merit, especially in regard to the difficulties overcome, I confess that it is a kind of painting which should not be much encouraged, because it never has the merit of a picture properly so-called—it is more costly, and will produce less effect in a large church than a stained window of much lower price; (5) windows of pale grey ground, with light arabesques, have a very poor effect wherever they are placed.

### Identification of Stone.

C. H. SMITH.

It is not very likely that a well-developed oolite would be taken for a sandstone, but I think it extremely probable that a casual observer might mistake some of the highly crystalline limestones for sandstones, and a very fine grained sandstone might just as likely be taken for a limestone. The more scientific method of detecting the difference is to test them with an acid. Diluted muriatic acid is perhaps the best; but this is not a very agreeable fluid to carry in the pocket, and not always to be obtained conveniently. And if it were, some of the beautifully crystallised magnesian limestones are at first so amazingly slow in their progress of effervescence that an inexperienced



person might decide erroneously without waiting for the actual result. The method most convenient on all occasions, and which I am inclined to believe will rarely, if ever, lead to false conclusions, is to try if the specimen will scratch glass with a slight pressure of the hand. Common crown glass is better for this purpose than any other, and if it makes a mark that cannot be wiped off with the finger, there is no doubt of the sample being a sandstone, composed chiefly of quartz or silicious grains. There are, I admit, other substances which will scratch glass, such as diamonds, rubies, and most of the precious stones, but these are never found in enormous masses. Chert or flint will also do the same, but no one would test such materials under an impression that they might be sandstone, their appearance alone being a sufficient proof. The method I have proposed is only intended for such stones as, by their resemblance to others, might probably lead to erroneous conclusions.

#### Selection of Stone.

SIR H. T. DE LA BECHE.

There was some excuse for the accidental durability of the stones employed in public or large private edifices in former days, when the mineralogical structure of building materials was so little understood; and the architects of those times could not always have churches or castles before them, from which they might judge of the relative durability of any stone they were about to employ, the quarries opened by them being also then often first worked to any considerable extent. The architects and engineers of the present day cannot, however, avail themselves of these excuses, for the necessary chemical and mineralogical knowledge is readily acquired; and the number of public and private edifices of various dates scattered over the country is so great that the relative durability of the materials employed in their construction can easily be seen. It is nevertheless well known that with some few exceptions the mineralogical character of the stone employed in public works and buildings has hitherto received little attention from either architects or civil engineers in this country, more especially from the former, whose value of a material seems commonly to have been guided by the opinion of the mason. Now the mason seems almost always guided in his opinion by the freedom with which a stone works—no doubt an important element in the cost of a building, but certainly one which should not be permitted to weigh heavier in the scale than durability—and hence many a fine public or large private building is doomed to decay even, in some cases, within a few years.

#### French and English Masons.

CAPTAIN FOWKE, R.E.

There is a very wide difference between the manner of working of an English and French stonemason, for while the former makes use exclusively of his trowel for taking up and laying mortar, using his hand merely in placing and arranging the stone, a French workman takes up a trowel full of mortar in one hand and a handful in the other; and really, to see him at work, the first impression is that his trowel is a mere auxiliary, and that the principal part of the work is done with the other hand. Their work, nevertheless, is remarkably good and firm; part of this, however, may be attributed to the admirable mortar which they employ, and to the ease with which the stone generally used is capable of being brought into any required shape.

#### Boss Stones.

PROFESSOR WILLIS.

The employment of a boss stone, that is, of a stone placed at the intersection of two groin arches, and provided with beds for the reception of the four ribs that thus meet upon it, is not coeval with the use of groin ribs, as might be at first imagined. In the early Norman examples, one pair of the diagonal ribs was first erected as a complete arch, and the other pair of ribs set up separately, and made to abut against the first arch, meeting either a voussour, or a joint, as the case might be. A very curious instance of this kind may be seen at the east end of the Norman crypt at Gloucester. The compartments of the aisle which run round the circular end are necessarily trapeziums in plan. The two diagonal groin arches are each a semicircle in a vertical plane, and they consequently intersect, not at their crowns, but at a point considerably lower down. That no geometrical method had then been invented to obtain the form of the boss stone at the intersection is evident, for one diagonal arch is complete in itself, and the other, as above, being built in two separate halves, abuts awkwardly and obliquely against the first, having been evidently left to shift for itself, just as the vaulting surfaces were in the same early period. In the round church of St. Sepulchre at Cambridge, the compartments of the aisles are also trapeziums upon the plan, but the awkwardness of making the semicircular groin ribs intersect below their crown is very ingeniously got rid of. Those points of the outer wall from whence every pair of

neighbouring ribs spring, are placed at such a distance from each other that the four feet of the diagonal ribs in each compartment really stand upon a rectangle, and the ribs therefore intersect at the crowns in the usual manner. In the eastern transepts of Canterbury there are boss stones with branches to receive the four diagonal ribs, but instead of attempting to work these branches to the same vertical curvature as the ribs they respectively receive, the branches are made straight and horizontal, and the ribs abut against them, forming a broken or discontinuous curve. Similar botchings may be observed in many early examples, and they are very curious, as showing the necessity for the geometrical system that afterwards arose.

#### Prescribed Proportions.

SAMUEL HUGGINS.

The Italian masters had no right to give canons for the proportions and profiles of the orders, which were neither more nor less than recipes for designs to supersede thought, and the exercise of taste and feeling and artistic ingenuity, which they were calculated to do whether they were so intended or not. Classic proportions might vary to suit the proportions of building materials, as well as different climates and different situations in a building. An elegant elongated columnar ordinance—that is, an attenuated Italian style not altogether devoid of Classic grace of detail—might, I fancy, be composed and proportioned for execution in iron.

#### Gelatine Moulds for Reproductions.

H. H. COLE, R.E.

In every class of piece-moulding the method of covering the carved surface with a number of inelastic moulds capable of being individually removed with ease is theoretically the same; but the perfection of the plaster piece-moulding depends on the skill of the moulder in so disposing of the moulds as to have the fewest possible joints when the piece-moulds have been made to completely cover the carving. These piece-moulds are, in turn, covered, or rather backed, with larger moulds, which serve to hold them in position when the cast is being made. In the gelatine process the backing, or wall, to hold the mould is the primary work, and then hot liquid gelatine is poured between the backing and the carving. The process is briefly as follows:—The carved surface is thoroughly cleaned and covered with rolls of modelling clay. The outer surface of the clay is smoothed, and a plaster coating or wall built against it. This wall is then removed, and the clay taken away; when replaced, an interval of the exact thickness of the clay will exist, and into this interval is poured gelatine. After twelve hours the gelatine will have attained the consistency of india-rubber, and may be peeled off the carved surface. In cases of deep undercutting considerable force is required to effect this. The gelatine mould is then laid on the wall which supported it in the liquid state, and a plaster cast, or fac-simile, is made. In every distinct operation the greatest care and experience are required in order that the natural good qualities of the gelatine may be allowed perfect freedom in producing an accurate copy.

#### Strength of Timber Beams.

A. ASHPITEL.

The formulæ given by Tredgold are too abstruse for general purposes. There is, however, one given by Nicholson which is simple, and not far from the truth. A number of experiments were made on pieces of various woods, each 1 inch square and a foot long, and the weights which broke them recorded. Then as this weight  $c$  is to the length of any given beam in feet  $l$ : so is the weight the beam will have to bear (in lbs.)  $w$ : to the breadth  $b$  multiplied into the square of the depth  $d$  of the intended beam; or as  $c:l::w:b \times d^2$ . Any of these three being given, the fourth is easily found. The breaking weight of Memel fir he gives as 330, that of oak he gives as 810; but this last seems too much. Suppose there is a warehouse 16 feet wide, the girders of which are 10 feet apart, and each superficial foot is to carry 3 cwt., or 336 lbs. Then as each girder supports  $16 \times 10 = 160$  feet superficial, and as each foot is to carry 336 lbs., the total weight to be carried is 53,760 lbs. distributed over the whole, or half this, 26,880 lbs., in the centre. Then as  $330:16::26,880:1,303$ , or the breadth multiplied into the square of the depth. But this is breaking weight, and no timber ought to be used of less strength than four times this. Then  $1,303 \times 4 = 5,212$ , the least amount we ought to reckon upon. Now we have our choice either to assume a breadth or a depth. Suppose we are confined to 17 inches for the latter. Then  $\frac{5,212}{17 \times 17} = 18$  inches very nearly. If we assume 15 as our breadth, then  $\frac{5,212}{15} = 347$ , the square root, which is nearly 19 inches; so that we may have a girder 18 inches wide and 17 inches deep, or one 15 inches wide and 19 inches deep, as we please.



## NOTES AND COMMENTS.

It is to be hoped that Mr. ORCHARDSON was able to obtain veritable authority for his portrait of Madame RÉCAMIER, since French connoisseurs can see fault in the subject. In the portrait exhibition which is now open in Paris, there is one of the lady by Baron GROS—a painter who was far from being imaginative. But the adopted daughter of Madame RÉCAMIER says that GROS was never allowed an opportunity to sketch the lady, and there is no resemblance in his picture. The portraits which are trustworthy are the full-lengths by LOUIS DAVID and Baron GERARD, the three-quarter length by Madame MOREN which comes the nearest to the original, and a bust by LEHMAN. To which of them was Mr. ORCHARDSON indebted? A pencil sketch of Madame RÉCAMIER was taken after her death by M. DEVERIA, miniatures have been copied from GERARD'S canvas, CANOVA made a bust which is now at Lyons, and there are medallions by DAVID D'ANGERS and PRADIER, but the four portraits above named are the most satisfactory.

ADMISSION to the private view of the Royal Academy is so eagerly sought as an opportunity to display toilettes that ladies would be willing to pay well for the privilege. A hint might be taken from what has happened this season at the Paris Salon. Strangers were allowed to be present by payment on varnishing day, and five-and-twenty thousand francs have been obtained in this way for the benefit of the wounded at Tonkin. A much larger sum should be obtainable at Burlington House.

THE Breton menhirs and prehistoric monuments, which, according to Mr. FERGUSON, are the most remarkable group of megalithic remains, not only in France, but probably in the world, have been fairly preserved owing to their legendary interest, or rather, it may be said, from the superstitious fear of the Breton peasants. Still, there is evidence that the circles have been used as quarries. The French Government are gradually obtaining all rights of proprietorship in the remains. The dolmen and menhirs of Kermario have been lately purchased for about 18,000 francs. The stones lying on the ground have been raised, and a notice has been set up to the effect that the place is national property, and must be respected. There are, however, some parts which have not yet been acquired, owing to the extravagant value which has been set upon their interest by the inhabitants. In spite of its interest the district is rarely visited by tourists, but it has been sufficiently fascinating to retain a Scottish archaeologist, Mr. MILNE, who has devoted himself to preparing a large work on the remains, besides establishing a museum in Karnac.

AN award has been given in the arbitration case in which the Scottish Amicable Life Assurance Company sought to recover 36,000*l.* for property required by the Glasgow City and District Railway. In addition there was a claim for loss of trade in an hotel amounting to 4,000*l.*, and 400*l.* for loss arising on sale of furniture, or in all 40,400*l.* The property is situated in Dundas Street, opposite the entrance to the North British Railway Station. The area of the ground is 566 square yards, and the rental 1,313*l.* The sum awarded is about 65 per cent. of what was claimed, being 26,240*l.* for the property, 1,200*l.* for the business, and 140*l.* for the loss on furniture.

It is not often that towns which are remarkable for antiquity are found associated with modern inventions or discoveries, but this is now the position of Orbetello on the road from Leghorn to Rome. Monte Argentario, which is in the neighbourhood, is rich in ores containing a large proportion of oxide of manganese, in union with oxide of iron and a base of carbonate of lime, which are invaluable in the new processes for making steel. The mines are worked by an English firm, and are connected by a tramway with the town. Orbetello, though of great antiquity—the massive stone courses in its walls being referred to the Pelasgian period—in itself presents little of

interest. When viewed, however, from a distance, reflected in the surface of its shallow lake, often unbroken by a ripple, it forms a picturesque object in the landscape, and might well arrest the attention of the artist. To the archaeologist also the neighbourhood will repay a visit. At the point of Santa Liberata are the ruins of a villa constructed by the Emperor DIOCLETIAN, and on a promontory at the southern extremity of the lake are the remains of the more ancient town of Ancedonia. It is said that this site has never been thoroughly explored. On the shores of Monte Argentario there are two small towns—Santo Stefano to the north, and Porto Ercole on the south. Plans have lately been submitted to the Italian Minister of Public Works for a system of steam-tram lines connecting these towns with Orbetello and the station of the same name on the Roman railway.

THE French Commission of Historic Monuments have purchased for the Cluny Museum the two enamels representing CLAUDE DE LORRAINE and ANTOINETTE DE BOURBON, which formed part of the monument in the Hospital of the Holy Cross, Joinville. The price to be paid is 45,000 francs.

ANOTHER catacomb has been discovered by accident near the Via Appia Pignatelli, in Rome. It is considered to have belonged to the Israelites. This conclusion is based mainly on the appearance of palms as emblems on the walls, and according to one theory the palm was not used by the Christians until the fourth century. If the theory can be supported, this catacomb will form the third which the Jews owned within a length of one mile. The place had been visited in an earlier age, for nothing valuable was found by the workmen.

THE works for the foundations of the GAMBETTA memorial have been commenced in the Place du Carrousel, Paris, between the Pavilion Molliou and the Pavilion Turgot. But it is not to be supposed that there is any prospect of a speedy completion of the work, for the memorial is not likely to be unveiled before the *fêtes* of July 1887. The total height of the monument will be 72 feet, and of the principal group 20 feet, and it is necessary to carry up the foundations for a depth of 23 feet. The architectural part will be the work of M. L. C. BOILEAU, and M. PAUL AUBE is the sculptor. They obtained the commission in competition. GAMBETTA is represented standing erect over three wounded soldiers. On each side of the pedestal are statues of Force and Truth. The truncated pyramid against which the chief figures are posed supports the Genius of Democracy, seated on a winged lion. On one of the faces of the pedestal extracts from GAMBETTA'S speeches are to be engraved.

JEDDAH being the port of Mecca, or, in other words, the place of arrival and departure of the thousands of Mohammedan pilgrims visiting the shrines of Mecca and Medina, is a place of great importance. The advantage of sanitation has become recognised at length, and a scheme is afloat for providing Jeddah with pure water by means of pipes from a place in the hills, where water is said to be obtainable in sufficient quantity. The Governor-General having taken the matter up, local subscriptions in Jeddah have already been obtained to the amount of 3,300*l.* The total cost is estimated at 12,000*l.*, a portion of which is to be borne by the administration of the Ain Jobeida Water-works of Mecca. Little rain having fallen for three years in Jeddah, the supply in the desert tanks and cisterns outside the town was alarmingly scarce and bad, causing serious apprehensions for the future. Happily, rain fell in December in sufficient abundance to fill the cisterns and to provide two or three water supplies to the town. Should the present scheme succeed, a change for the better may probably be looked for in the normally unhealthy climate of Jeddah, which was exceptionally unwholesome during last winter, the heats continuing into January. Jeddah, however, being built upon soil containing abundance of saltish, brackish water at a depth of two or three feet, much change in its salubrity can hardly be expected.













*The Art: The Painter.*  
*By M. F. Hermann.*













Wm. Russell - Smith, Architect  
10 John St. Adelphi.

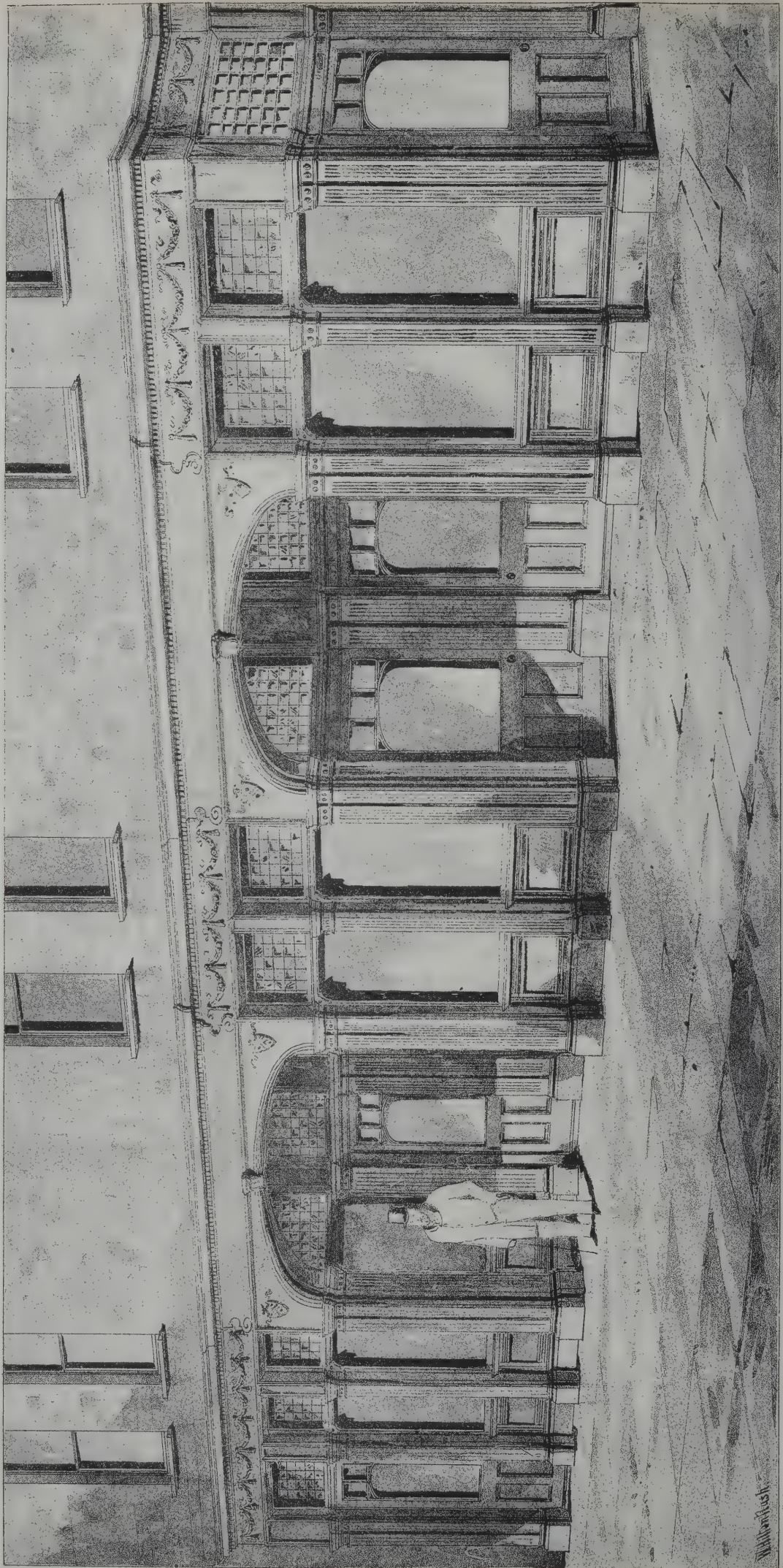
- CHRIST CHURCH - PENGE -

Spottiswoode & Co. Lith. London.







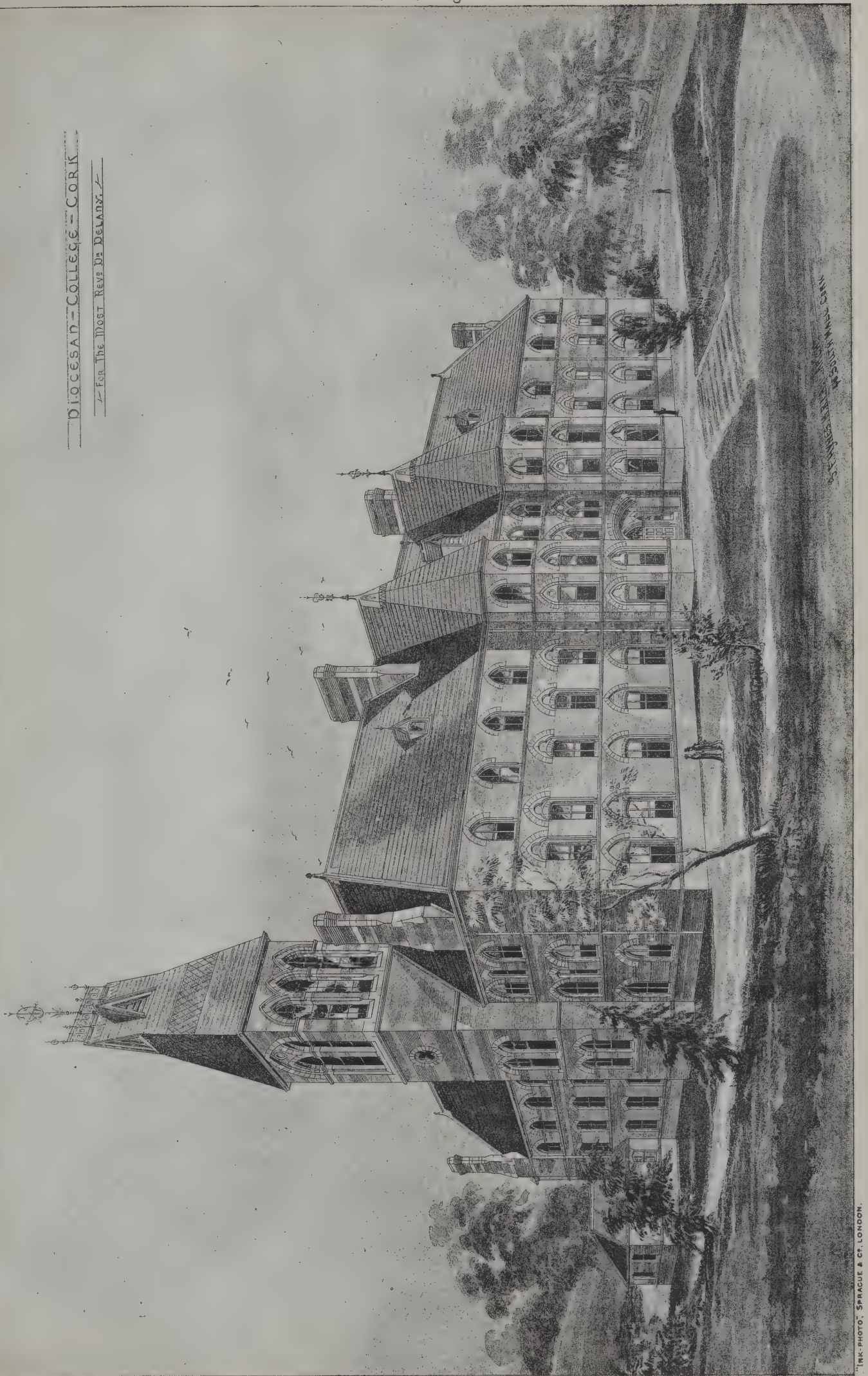


"THE CITY ARMS," POPE'S HEAD ALLEY, CORNHILL.  
W. HILTON NASH, ARCHITECT.



DIOCESAN COLLEGE - CORK

— FOR THE MOST REVS. DR. DELANEY. —











2. "Brynawer, Brecknockshire, for the Rev. W. Clifton Mogg, S. Williams & Co. Rhosader."







## ILLUSTRATIONS.

THE ARTS: THE PAINTER.

THIS plate is the second of the series by M. EHLMANN.

NEW PREMISES FOR MESSRS. SHORT & CO., POPE'S HEAD ALLEY, LOMBARD STREET.

THE premises known as the City Arms, Pope's Head Alley, which we illustrate this week (formerly known as REEVES'S) have lately been taken by Messrs. SHORT & Co., wine merchants, and have now been entirely remodelled, a new front constructed in handsomely moulded wainscot, with pilasters, &c., and the walls panelled in the same material. Mr. CHARLES COX, of Hackney, was the builder engaged in executing the work, which has been carried out from designs and under the superintendence of Mr. W. HILTON NASH, A.R.I.B.A., of 5 Adelaide Place, London Bridge.

NEW DIOCESAN COLLEGE, CORK.

THE new Diocesan College, Cork, is being built on an elevated site commanding a splendid view of the city. It is very conveniently planned for its purpose. On the ground floor are arranged the chapel, school and classrooms, library, refectory and offices, &c., opening off spacious cloisters. The chapel will be very pretty, and the most ornamental part of the structure. On the first floor are arranged the professors' rooms, &c., and, on the floor over, the students' rooms.

As it was necessary to study economy in the design, the architect relied on boldness and effective grouping, more than costly details, for effect. The general facing of the building is of Bridgwater brick, relieved by white brick in arches, &c. The string-courses, cusped heads, tympana of windows, doors, &c., are of cut limestone, and the general effect of the materials is very pleasing.

The works are now far advanced, and the contractors, Messrs. E. & P. O'FLYNN, are doing their work very satisfactorily. The architect is Mr. SAMUEL F. HYNES, M.R.I.A.I., architect, South Mall, Cork.

CHRIST CHURCH, PENGE.

THIS new church is situated in the Croydon Road, Penge, and is to serve for a large and increasingly populous district, principally poor. The plan consists of a nave, with north and south aisles; chancel, also with aisles; a large vestry, or parish room, on the north side, and at the west end a narthex and tower. The whole is faced with Kentish rag and with Bath stone dressings. The extreme length of nave and chancel is 134 feet, and the width 68 feet, and when completed there will be accommodation for about one thousand persons. The architect is Mr. BASSETT-SMITH, of John Street, Adelphi, and the contractors are Messrs. GODDARD & SONS, of Farnham and Dorking. The work was commenced in June last.

The nave and aisles have just been opened for divine service, and the chancel and chancel aisles are now in progress, and will be completed in August next. The gas-fittings were supplied by Messrs. HART & Co., and the warming apparatus by Messrs. BRADLEY, of Dereham. The cost up to the present time has been about 7,000*l*.

BRYNVERN, BRECONSHIRE.

THIS proposed new residence near Newbridge-on-Wye, which forms the subject of one of our illustrations this week, is from the designs of Mr. STEPHEN W. WILLIAMS, architect and county surveyor, Rhayader, Radnorshire. The site of the proposed house is one of the most picturesque spots upon the banks of the Wye, and commands an extensive view of the river, and of the Breconshire hills.

The Brynvern estate has been lately purchased by the Rev. W. CLIFTON MOGG, who has built a bridge over the River Wye of wrought-iron lattice-girders, carried on cast-iron piers, 170 feet long, and he has also made nearly two miles of new road as an approach to the proposed mansion. The road and bridge have also been laid out and designed by Mr. STEPHEN W. WILLIAMS.

The general plan of the house is of the type of many of the old Welsh manor-houses, and is in the form of the letter H, with a central hall into which the principal reception rooms open. The style is Early Elizabethan; the walls will be built of stone from Trefnion Quarry, Breconshire, with a cavity to keep out damp, and lined with brick; the dressed stonework will be of red Alveley stone from Worcestershire, and the roof will be covered with Ruabon tiles from Mr. J. C. EDWARD'S works.

Included in the contract are stabling, coachman's house, lodge, garden wells, and a large tank to hold 5,000 gallons for the spring water supply.

## THE ARCHITECTURAL ASSOCIATION.

THE closing ordinary meeting of the Association was held on Friday evening, the 8th inst., Mr. Cole A. Adams, president, in the chair.

Mr. W. Fawcett, of Cambridge, diocesan surveyor, was elected a member of the Association by acclamation, and the following gentlemen were elected members in the usual manner:—Messrs. E. Carter, Owen Fleming, and T. Henry. The visit for Saturday (to-day), it was announced, would be made to the Tilbury Docks, Mr. Gruning, architect, and Mr. Manning, engineer.

## The Association Travelling Studentship.

The judges in this competition were Mr. Florence, Mr. Lee, and Mr. Batterbury. Out of five sets of drawings submitted, they awarded the first prize to Mr. Henry Denison Walton, and the second prize to Mr. Roland Wilmot Paul. The drawings of these two gentlemen were exhibited in the room.

The PRESIDENT stated that the sub-committee appointed at the beginning of the session to consider whether and how the efficiency of the work of the Association could be increased and consolidated, had drawn up their report, which, as soon as it was edited and printed, would be placed in the hands of the members, and that a special business meeting would be called to consider it at an early date, Friday the 29th inst. being mentioned as the day.

Mr. PERCY HUNTER then read a paper on

## Leasehold Tenure of Property, and its Prejudicial Results to London, both Socially and Architecturally.

Mr. Hunter, at the outset, referred to the causes that had led to the present extensive development of the system of occupying property on leasehold tenure for any term less than one hundred years; to the effect of this system on landowners socially; and to the results as shown in the government of the metropolis generally, the planning of London streets, and the architecture of the houses and public buildings. He alluded to the enormous growth of London, the development of railways and means of locomotion; but remarked that the chief centres of business still kept within their original and more confined limits. After going at some length into a consideration of the effects produced by the system of short tenure, he arrived at the following as the result on individual properties:—That the freeholder did not maintain his property, nor cause it to be maintained, because his interest was too remote. He only maintained his property so long as doing so maintained its marketable value and enabled him to realise his financial calculations in respect to profit rental. The occupier, who might be supposed to be the most immediately interested in the property, was prevented by the terms and conditions of his occupancy from having any interest in the property at all. There were three values in urban property—the ground rent belonging to the freeholder; the rental value obtained by the leaseholder in return for the capital laid out in erecting suitable buildings on the land; and the value of this improved property to the occupier or sub-lessee, depending in amount upon certain relative conditions of suitability of site, &c., for the purposes for which he occupies it, whether for residence or business. The influence of the system on localities was next considered, and a further proof became apparent that the trebly-divided ownership of property throughout London under the system of leasehold tenure was socially prejudicial. Speaking of its influence on architecture, Mr. Hunter said: Architecturally, London may be said to represent chaos itself. The law and order which we boast of in our civil life is absolutely wanting in the architecture of our metropolis. There is nothing expressive about it, except that of intense selfishness and utter disregard of subordination to general convenience; a reign of anarchy where every man does what is right in his own eyes, and what is wrong in the eyes of all his neighbours. In the arrangement of the streets there is no method, no evidence of design. There are awkward curves preventing the beautiful effects of distant vistas. There is an incongruous diversity in



the architectural fronts resulting from an anomalous collection of different styles; there is irregularity of outline without picturesque effect, and there being no unity, there can be no grandeur. In our streets generally, and private buildings, absence of subordination is very marked. A lofty building erected on a narrow frontage, with horizontal cornices of Classical design, opposed to all expression of altitude, but piled one above another in monotonous repetition, looks down with crushing effect upon its Gothic neighbour, whose aspiring lines, applied to a building of wide frontage, reach only half-way up the other's towering walls; while, on the further side, a blue painted, plaster-fronted tenement, used perhaps as a common coffee-house, and of whose tawdry appearance any petty provincial town might be ashamed, aggressively asserts itself, with some staring advertisement in front, while at the side its zinc chimney-pots scramble up the side of its lofty neighbour. These remarks refer to the older thoroughfares; but the worst influence of leasehold tenure is more evident in outer London, and is, of course, contemporaneous with its recent great development, for it is worth bearing in mind that, with the exception of the great Bedford, Westminster, and Portland estates, the present exclusive system of leaseholds was not fully developed until the period between 1818 and 1834, and then, with the growth of the metropolis, the system gradually affected, with ever-widening circles, the architectural face of the whole of Greater London. It may be as well, therefore, to notice here some of the distinctive effects of the system on our dwellings during the last one hundred years. On the large estates in Bloomsbury, Marylebone, and Mayfair we see the evidence of careful design in laying out of streets and squares; good planning of the houses (for the requirements of the time when they were erected) and sound buildings in their construction. In those days these qualities were insisted upon by the freeholders, who had a wise foresight as to the reversionary value of their properties, and they also satisfied the public. But there was very little endeavour to make the houses, either individually or in groups, externally pleasing to the eye by artistic treatment of their general features. Their naked and smoke-stained brick fronts in monotonous succession, destitute of all architectural decoration, from the stone-paved area below to the unaffected simplicity of the coping stones at the top, all declare with aggressive iteration that they are built to live in, not to look at. To this brick period succeeds the reign of stucco, of which Bayswater and Belgravia may be taken as typical examples. Many enormities have been committed with stucco by the unguided zeal of the speculative builder in the past, which remain to insult the eye and vitiate the taste of the present. In both these periods of brick and stucco, however, the building operations having been confined chiefly to a few great estates, there remains some evidence of general design and subordination before alluded to. But these qualities are soon lost sight of in the chaotic growth of Outer London during the last thirty years, and Local Government with its slow action and divided counsels has been unable to provide that guiding hand which is manifest on the great ducal estates. Another reason is that the freeholder himself, in addition to being a less wealthy man, and holding perhaps only one or two acres, instead of many, has, in the race for ground rents, become to a certain extent speculative too. Hence, among many adjoining owners there is but little or no unity of arrangements, while in the competition for public favour among their tenants, the leaseholding speculative builders, we get that free trade in architectural styles resulting in all those various and fearful combinations of white brick, red brick, Bath stone, stucco, slates, and tiles, according to the changing fashions of the years. But with each and every one of these it is the outward appearance that alone seems to be considered, and neither those who own, nor those who inhabit them, appear to think it worth while to pay much attention to the structural condition of the buildings. The occupier—that is, the public—to gratify his newly-developed South Kensington appreciation of the beautiful, and scorning the unaffected severity of Gower Street or Harley Street, wishes to live in the most showy-looking house at the cheapest possible rate, and tries to get a red-brick front, with moulded bricks and stone window dressings, tiled roofs and gables, ornate wood portico, tessellated entrance hall, leaded glass windows, elaborate decorations, and “every modern convenience” for a rental of something under 50*l.* a year. Can he wonder if he finds out, after a brief occupation, that such a house may be built to look at but not to live in? But there is no use in villifying the speculative builder. He is not really responsible for the sins he commits, nor has he been imposed by a wicked and tyrannical Government upon a helpless and down-trodden humanity. Both he and his works are the natural offspring of the system of leasehold tenure of property. I have not considered it necessary to go into the law of leases generally or of building contracts. Nor have I alluded, except indirectly, to the effect of leaseholds on the dwellings of the poor. This is a subject deserving of separate and special consideration, and it is beyond the scope of this paper, which deals

with the effect of leaseholds on society as a whole, and not on any particular class.

In considering whether the evils of the system could be remedied, Mr. Hunter remarked:—I have seen it gravely recommended in the *British Quarterly Review* of April 1879 that the corporate estates throughout London should be compulsorily sold with preference to the leaseholders, and the proceeds invested in the Funds. If such a recommendation were good in principle, there seems to be no special reason why its action should be limited to the property of corporate bodies only. But, whether partially or wholly carried out, the proposal is an absurd one. It would require the assistance of the imperial exchequer to perform so great a work, and it is not likely that every Englishman, Scotchman, and Irishman would wish to assist Londoners in particular to sit down under their own freehold fig-trees. If the work were done by means of local rates, the opportunities for jobbery would be infinite, while there would be no practical difference between paying a very heavy rate towards a district and paying the rental value in the ordinary way to the owner of the property. The value of the property, whatever it is, and to whomsoever it may belong, is there, and must be accounted for, or else both the State and the individual (whether freeholder or occupier) must suffer loss. Suppose, however, that by such fanciful legislation or a stroke of the pen we were able to enfranchise all leaseholds throughout London to-morrow, what would be the natural and inevitable consequence? We should simply find the day after that half the freeholders had realised the present value of their newly-acquired properties, and had sold or mortgaged them for different terms of years at their market values; and chaos would have come again. Surely, then, we must admit that it is both impolitic and impossible to deal with this difficult question in any artificial manner, and we arrive at the conclusion that the only true solution of it rests in that general appreciation of the evils arising out of the divided ownership of property under the leasehold system, which have been only partially described in this paper, and by convincing society that occupation for short terms at high rentals is, in the end, economically unsound. If these principles be true, and were generally accepted and acted upon, we might hope to obtain gradually that desideratum alluded to above—a much larger class of house-owners, in place of the present class of householders, who would, by their permanently-secured local interests, be induced to assist actively and intelligently in governing, maintaining, and improving our magnificent metropolis. The universal application of this idea to all classes alike is, however, from various causes, utterly impossible; and those who, for the sake of gaining a little present popularity, mislead people with such vain proposals, incur great responsibilities, and are certain to be defeated in time by the hard logic of results. The old saying is equally true now in the nineteenth century as it was in the days of feudalism, that “They shall get who have the capital, and they shall keep who can.”

Mr. R. G. TURNER moved a vote of thanks to Mr. Hunter for his paper. This was seconded by Mr. Brodie, and carried by acclamation.

Mr. GOTCH proposed a vote of thanks to the retiring president, Mr. Adams, which was seconded by Mr. Stannus, and carried with the greatest enthusiasm.

The scrutineers, Mr. Fawcett and Mr. Fraser, handed in the results of their counting of the voting papers, and the new list of officers for the ensuing session was read as follows:—

*President*.—Mr. R. C. Pink.

*Vice-Presidents*.—Mr. J. A. Gotch and Mr. W. H. Atkin Berry.

*Committee*.—Messrs. Cole A. Adams, F. E. Eales, F. R. Farrow, E. J. May, W. J. N. Millard, W. A. Pite, J. Slater, B.A., L. A. Stokes, A. Young, and W. H. Bidlake, M.A.

*Treasurer*.—Mr. J. D. Mathews.

*Assistant Treasurer*.—Mr. H. W. Pratt.

*Librarian*.—Mr. R. L. Cox.

*Hon. Secretaries*.—Mr. H. D. Appleton and Mr. T. E. Pryce.

*Solicitor*.—Mr. Francis Truefitt.

*Assistant Librarians*.—Mr. W. Burrell and Mr. J. Shelley Birch.

*Auditors*.—Mr. Horace Cheston and Mr. A. C. Bulmer Brooke.

*Registrar*.—Mr. T. H. Watson.

*Collector*.—Mr. Alfred Hill.

Votes of thanks were passed to the scrutineers, and to Mr. Berry, the retiring hon. secretary, and the proceedings terminated.

**The Right Hon. the Lord Mayor** has kindly consented to preside at the Second Festival Dinner in aid of the funds of the London Fever Hospital, which is to be held at Willis's Rooms on Tuesday, June 23. H.R.H. the Prince of Wales presided at the first dinner, which was held there three years ago.



## THE BRITISH ASSOCIATION.

THE arrangements for the next meeting of the British Association at Aberdeen on September 9 next have been all but completed. The last time the Association met at Aberdeen was in 1859, under the presidency of the late Prince Albert. The president-elect this year is Sir Lyon Playfair, who will take the place of Lord Rayleigh, who presided at Montreal last year. Among the vice-presidents are the Duke of Richmond, the Earl of Aberdeen, the Earl of Crawford, Lord Provost Matthews, Sir William Thomson, Dr. A. Bain (Lord Rector of the University), Principal Pirie (Vice-Chancellor of the University), and Professor W. H. Flowers. The general secretaries are, as usual, Captain Galton and Mr. A. G. Vernon-Harcourt, while Professor Bonney serves for the last time as acting-secretary. The presidents of the various sections are as follows:—A. Mathematical and Physical Science, Professor G. Chrystal. B. Chemical Science, Professor H. E. Armstrong, of the Central Technical School. C. Geology, Professor J. W. Judd. D. Biology, Professor W. C. McIntosh. E. Geography, General J. T. Walker, C.B. F. Economic Science and Statistics, Professor Henry Sidgwick. G. Mechanical Science, Mr. Benjamin Baker, M.Inst.C.E. H. Anthropology, Mr. Francis Galton, F.R.S., President of the Anthropological Institute. The lecture to working men this year will be given by Mr. Harold B. Dixon, M.A., Fellow of Trinity College, Oxford, on "The Nature of Explosives." The other lectures will be—on September 10, by Professor Grylls Adams, who is not yet able to announce his subject; and on September 14, by Mr. John Murray, director of the *Challenger* Expedition Commission, on "The Great Ocean Basins." Excursions to places of interest in the neighbourhood of Aberdeen will be made on the afternoon of Saturday, September 12, and on Thursday, September 17.

## A YEAR'S WORK OF THE BOARD OF WORKS.

THE annual report of the Finance Committee was presented to the Metropolitan Board of Works at the meeting on the 8th inst. It states that the Board has been engaged since the year 1879 in constructing in various parts of the metropolis additional large sewers by way of supplementing and relieving some of the sewers of the main drainage system which, in times of heavy rain, were found inadequate to carry off with sufficient rapidity the enormous volumes of water which found their way into them. During the year just ended the following new sewers had been completed or were in progress:—Deptford overflow sewer, completed in September last, at a cost of 33,000*l.*; new sewers from Putney to Clapham, at a cost of 151,995*l.* 19*s.*, more than half of this completed; the Eltham drainage, at a cost of 23,500*l.*; Ranelagh and King's Scholars' Pond sewers, at a cost of 96,300*l.*; Bridge Road, Hammersmith, and Stamford Brook sewers, at a cost of 8,353*l.* Various works have been done during the year to keep the buildings and machinery of the pumping stations in good order, and also other works under the Board's general contracts. Since the year 1871 the cleansing of the main and intercepting sewers (in all, about 250 miles in length) has been done by a special staff of men employed by the Board for the purpose. The cost of the work during the past year was about 14,000*l.* The allied subject of the state of the Thames and the investigation by Lord Bramwell's commission are next considered. As the summer of 1884 was unusually hot and dry, the Board found it necessary during a portion of the year to take measures for deodorising the sewage at the outfalls. The Board had set up apparatus and machinery at the Crossness pumping station, which would enable it to manufacture in sufficient quantities the compounds required for deodorising.

During the past year the Board had been engaged in acquiring the property which had to be taken for the formation of the new street from Tottenham Court Road to Charing Cross, and claims have been settled to the amount of 278,076*l.* Claims in respect of property required for the new street from Oxford Street to Piccadilly Circus, to the amount of 45,572*l.*, have been settled, and nearly all the property required has now been acquired. Of the widening of Gray's Inn Road, the greater portion of this improvement had been carried out, and the widened thoroughfare from Holborn to Clerkenwell Road was opened to traffic last April. Of the land devoted, under the Amending Act of 1882, to the erection of working-class dwellings, the first section only had been cleared. It consisted of three sites, all of which have been taken up, the total purchase money for them being 5,405*l.* for 999 years' leases at shilling rents. The Board had proceeded with a number of other improvements of a minor character in which satisfactory settlements had been made.

Parliament sanctioned fourteen improvement schemes previously to the passing of the Act of 1882, and they were

either completed or in various stages of progress. In order to test the practical working of the new Act, four new schemes were prepared, and having been confirmed by Parliament in the year 1883, were now being proceeded with; and two additional schemes had been prepared and deposited by the Board in the year just ended for the improvement of unhealthy areas in Deptford and Newington respectively.

With respect to bridges over the Thames, the report states that the foundations of the piers of Waterloo Bridge had all been deepened and secured. The Board in 1881 obtained power to build new bridges at Battersea and at Putney. The latter bridge was to be a broad and substantial structure of granite, the price agreed upon being 240,433*l.* 19*s.* Considerable progress had been made with the new bridge, and on July 12 last their Royal Highnesses the Prince and Princess of Wales visited it and laid a memorial-stone. A temporary bridge was also being built at Hammersmith at a cost of 82,177*l.* The failure of the attempt to obtain power from Parliament for providing means of transit below London Bridge is acknowledged.

The Board's expenditure during the year 1884, including 920,823*l.* advanced on loan to other local authorities, 1,602,672*l.* invested in Treasury bills, and 194,533*l.* applied to reduction of debt, had amounted to 5,373,170*l.*, of which 1,961,329*l.* had been defrayed out of money raised by the issue of Metropolitan Consolidated Stock.

## A CLERGYMAN'S VIEW OF ARCHITECTURE.

AN address was lately delivered in Wolverhampton by the rector, the Rev. J. T. Jeffcock, M.A., upon "Modern Architecture," in which he considered what should be the relation of the public towards the art. Every art, it was said, if it was to be successfully cultivated, required a public of its own. An actor must have his audience, painters and sculptors must have spectators to gaze upon their works. And in proportion as this audience and these spectators are educated in the particular art they affect, and appreciate its difficulties and triumphs and beauties, so will it be easier and more interesting and more inspiring for the artist to pursue his calling—not only creating new works, but creating them with (over and above what strikes the senses at first) hidden and interior beauties, discoverable—or at any rate appreciable—only by those who can give a cultivated attention to the subject. An advance in our appreciation of music and painting had been made by this generation; as regarded sculpture, no advance had, he feared, been made; and as regarded architecture, a certain advance, but not entirely, as that advance appeared to be retarded. Now, as members of the general public to whom the artist in architecture looks for sympathy, what, he would ask, ought to be their attitude towards architecture and the architect? In a climate like this, a house to live in, and in a free and religious country like this, a place to meet in for administrative, political, and religious purposes was of prime importance. Whether it be handsome or ugly, convenient or awkward, safe or insecure, still a building of some kind we must have, and hence it was that architecture touched us all. We all, therefore, ought to know something about it; at any rate, to know as much about it as would enable us to help the architect by telling him what we want as regards accommodation, and in being able to appreciate pretty well at its worth the good or commonplace or ugly design he may put before us. To attain this knowledge it was necessary in the first place to become acquainted with what he termed the grammar of architecture; and for the proper learning of this he recommended the study of Bloxam's "Gothic Architecture," of which no less than eleven editions had already been issued since 1841. To acquire a knowledge of architecture was something more than a catching up of the nomenclature of the art and knowing what a soffit or an architrave might mean; it was the getting of possible material forms and beautiful material forms well into the minds of the general public that was of importance. Therefore, in addition to the study of works of the kind he had named he recommended that some of the buildings illustrated in such books or mentioned in the indexes should be visited, as opportunity offered, quietly inspected and examined, and sketches or notes made of their most striking features. By thus spelling out, as it were, the grammar of architecture, by seeing what had been done, and learning what could be done with stone, brick, or wood—for each required different treatment—a man discovered not only what should be done in any new case, but had his taste trained to know also what should be avoided. It was in this way that Sir Gilbert Scott achieved his distinction. He could quote chapter and verse for all he did; could quote example and precedent for every form, every arrangement he adopted. And this it was that made him unrivalled as a restorer of old buildings; for it was in restoration that the memory comes in so strongly, and by recollecting innumerable precedents enables the architect to reproduce from very faint data—just as Professor Owen would



restore an extinct animal from a fossil bone or two—the actual design that was originally in the mind of a man long dead. Some forty years ago all architects were critics only—following precedent, and only adopting what they could quote examples for. They were spelling out the alphabet of old English forms, and piecing them together in their new buildings; they were the grammarians of architecture, and not original composers. It was otherwise now. Historical forms, old examples, ancient precedents, and fixed standards were ignored, and modern architects ventured, sometimes presumed, to “create,” and often created very abominably. For this change, from the historic to the creational treatment of English architecture, Mr. Ruskin was largely responsible. Hence the greater necessity that the public at large should be educated themselves with regard both to the first principles and the historic criticism of architecture, so as to be able to pull up short an architect whom any of them might find committing any palpable folly in any building in which they might be interested. Yet how few people had the slightest knowledge on these points. There should be thorough harmony and a clear understanding between client and architect as to the character and size of the building required, the interior accommodation, the position of doors, windows, staircases, and other details, and how the whole was to be carried out. After a few explanatory remarks as to the force of gravitation as realised in architecture, and the necessity of following out those true architectural principles in the erection of a building as would, without interfering with the beauty of the design, enable each part of it to resist this force, and at the same time add to the strength and security of the building, the President passed on to consider the æsthetic side of his subject. Architecture was concerned with beauty in every phase within its own sphere; that beauty which is perceived by the beholder when he traces delicate touches of thought impressed upon the cold unthoughtful stone, upon the insensible wood, upon the unyielding iron; the beauty, too, which he discovers in living likenesses of living forms—a leaf, a stem, a flower petrified yet still living in the marble, alabaster, or stone before him; the beauty, too, he sees in pure geometrical forms, as in the clerestory windows at Lichfield, in the picturesque outline, or in the intense variety of parts of some of our nobler English buildings, and yet amidst all this variety an underlying essential unity discernible; the diverse beauty, too, of size, regularity, and proportion, which gives to Classic architecture so much of its grace; the beauty of light and shade, the beauty of material, the beauty of colour superadded as in fresco, or stained glass, or inlaid work; the beauty of sculpture, and especially of the human form, adding itself as the noblest enrichment of a worthy building; all these were phases in which the architect might show forth, not only material beauty, but the beauty also of thought appearing through and beyond the material, and making it instinct with living language to the appreciative soul. But unless the public taste was educated to see beauty where beauty really exists, no gifted architect would dare to soar beyond the regions of commonplace utility for fear of being misunderstood by clients and losing business; or, if a beginner, he would not be lured on to the cultivation of an æsthetic sense, when he found there was no public demand for it, and that the dull surveyor sort of mind filled the pockets better than the genius which could write its poetry in stone, and brick, and wood. The President next glanced at the subject of street architecture and the desirableness of something being done in connection with the laying out of new streets, to have the houses, shops, and other buildings to be erected on each side of them constructed on some well-defined plan so as to produce one harmonious whole, instead of the incongruous grouping of different designs, different elevations, and other examples of bad taste which were too frequently to be seen in some of our principal streets and squares. Thus they would see Classic edifices well proportioned in themselves, but put most provokingly against Gothic ones with which they are in no *rapprochement*, as in the Wolverhampton Art Gallery; stucco-cased dull shops pretending to answer to ornamental brick and terra-cotta ones over the way, and these bright red ones throwing into smoky grey relief their plain ashlar stone next neighbours; high erections put where moderate ones would suit best, and low where high ones were wanted. He did not mean to contend that it was at all necessary to satisfactory effect that a whole street should be built at one time or by one architect, but surely a man who builds should consider the site and surroundings of what he is building, so that it shall not only not clash with what is there already, but harmonise or contrast pleasantly with it, and so enhance the beauty of the whole. To secure good street effect was, he feared, beyond the power of our city ædiles, though they might lay out a good curve (as in new Lichfield Street, Wolverhampton). Good grouping of houses must, he thought, be left to improved individual taste among large and small capitalists, and to such influence as the reason and enthusiasm of our architects can exercise over their patrons. In conclusion he pleaded for more attention being given by the general public to making themselves acquainted with the principles of archi-

ture; for greater sympathy between client and architect; for care in the selection of the right man to employ, according to the character and the style of the building to be erected, and then for the client to give to him careful and clearly defined instructions as to the class of building he required and the various details connected therewith

### BIRMINGHAM ARCHITECTURAL ASSOCIATION.

ON Saturday last the members of the above society paid a visit to Worcester Cathedral and city. Amongst those present were Messrs. F. B. Osborn (president), W. Hawley Lloyd, Victor Scruton (hon. sec.), W. Doubleday, O. Essex, T. W. F. Newton, F. Bailey, H. Clere, H. H. McConnal, H. Rayner, D. Arkell, J. Lavender, H. Beck, J. Goodman, &c. On the way to the cathedral the party visited Trinity Church, and inspected the fine ancient roof formerly over the Gueston Hall. On reaching the cathedral they were met by the dean (the Very Rev. Lord Alwyne Compton, D.D.) and the Rev. Canon Cattley, and were much pleased by the many interesting features that were pointed out and commented upon. Before leaving the building the members inspected the crypt, cloisters, chapter-house, bells, and obtained a fine view of the surrounding district from the top of the great tower. On descending, the party passed into the refectory, and having freely discussed its marked peculiarities, they visited the Edgar tower and other portions of the cathedral.

After a pleasant luncheon, served at the Hop Pole Hotel, the president referred to the courtesy of the dean and the kindness of Mr. W. Hawley Lloyd in supplementing his paper, given before the association in January last, by the valuable information he had now imparted. After viewing the exterior of All Saints Church, the cathedral from the river, and several old buildings, the members returned, reaching Birmingham at 6.30 P.M., having spent a most enjoyable day.

### THE SURVEYORS' INSTITUTION.

THE Council announce that the following candidates, whose names appear in alphabetical order, have passed the recent professional examinations of the Institution:—

*For the Professional Associateship.*—Arthur Joseph Edwin Arch, John Arnott, Cecil Cautley Baker, Edwin Thomas Beard, Harry Blundell, Alfred Virgoe Buckland, Herbert George Coales, Marcus E. Collins, Alfred Eiloart, William Jacob Gibbon, Robert Godfrey, Charles Henry Hebblethwaite, George Edward Hiliard, William Vincent Jull, George Arthur Lansdowne, Charles Ralph Maddox, Arthur John Martin, Frank Massie, Sydney Perks, John Rand, John Moore Sturgess, John Henry Tiffen, John Watson, jun., George Arthur Williams, and Sidney Williams.

*For the Fellowship.*—Frank Arthur Bontor, Thomas Arthur Dickson, Harold Edward Moore, James Pain, Philip Edward Pilditch, and Henry John Treadwell.

## Bygones.

“Antiquity after a time has the grace of novelty.”—HAZLITT.

### HOW BENJAMIN WEST, P.R.A., UTILISED THE ELGIN MARBLES.

THE American artist, Benjamin West, made his mark in England when, in his picture of the *Death of General Wolfe*, he represented the general, his soldiers, and the friendly Indians wearing the costumes of the time instead of Classic robes. The work was supposed to inaugurate an era of realism, and on the strength of its renown the painter became the President of the Royal Academy. But West was not disposed to abandon high art. He painted Classical subjects, and it was remarked that the designs for them which he produced in his latter years were much superior to his earlier works. The reason for the difference will be apparent from the following letter which he wrote to the Earl of Elgin. It raises the curtain of a painter's studio, and explains how inspiration is often sought, although the source is seldom so frankly acknowledged:—

My Lord,—I have to acknowledge the receipt of your lordship's obliging letter from your residence in Scotland, and have to thank you for the indulgence you afforded me to study and



draw from the sculptures by Phidias, in your lordship's house in Piccadilly.

I have found in the collection of sculpture so much excellence in art (which is as applicable to painting and architecture as to sculpture), and a variety so magnificent and boundless, that every branch of science connected with the fine arts cannot fail to acquire something from this collection. Your lordship, by bringing these treasures of the first and best age of sculpture and architecture into London, has founded a new Athens for the emulation and example of the British student. Esteeming this collection as I do, my lord, I flatter myself it will not be unacceptable for your lordship to know what are the studies I have made from it.

I must premise to your lordship that I considered loose and detached sketches from these reliques of little use to me, or value to the arts in general. To improve myself, therefore, and to contribute to the improvement of others, I have deemed it more important to select and combine whatever was most excellent from them into subject and composition.

From the Centaurs in *alto rilievo* I have taken the figures of most distinguished eminence, and formed them into groups for painting; from which selection, by adding female figures of my own, I have composed the *Battle of the Centaurs*. I have drawn the figures the size of the originals, on a canvas 5 feet 6 inches high by 10 feet long.

From the equestrian figures in *relievo* I have formed the composition of *Theseus and Heracles in Triumph over the Amazons*, having made their Queen Hippolita a prisoner. In continuation, and as a companion to this subject, I have formed a composition in which Hercules bestows Hippolita in marriage upon Theseus. Those two are on the same size with the Centaurs.

From the large figure of Theseus I have drawn a figure of that hero of the same size with the sculpture. Before him, on the ground, I have laid the dead body of the Minotaur which he slew. As by this enterprise he was extricated from the labyrinth by the aid of Ariadne, I have represented that princess sitting by his side gazing on him with affection. In the background are the Athenian youths whom he delivered from bondage, and near them the ship "with black sails" (in the poetic fancy of Pindar) which brought him to Crete. The size of this canvas is 6 feet high by 9 feet long.

From the figure of Neptune I have formed a companion to the Theseus. In this composition I have shown Neptune reclining with his left arm upon the knees of Amphitrite, while with his right he strikes the earth with his trident, and creates the horse. Around him is Triton with his train of marine gods; in the background are equestrian exhibitions, and in the distance ships at anchor.

From the casts in plaster of Paris taken from the moulds which your lordship had made at Athens, I selected such figures as I was enabled to form into a composition, the subject of which is *Alexander and his horse Bucephalus*: it is on a canvas smaller than those before-mentioned.

In order to render the subjects which I selected with perspicuity, and the effect which arises from combined parts and the order of arrangements comprehensive, I have ventured to unite figures of my own invention with those of Phidias; but as I have endeavoured to preserve with the best force of my abilities the style of Phidias, I flatter myself the union will not be deemed incongruous or presumptuous. Your lordship may perhaps be inclined to think with me that a point, and, if I may so express it, a kind of climax is thus given to those works by the union of those detached figures with the incorporation of the parts of individual grandeur and abstracted excellence of Phidias. For what I have done, my lord, I had the example of Raphael and most of the Italian masters of the greatest celebrity. Is it not, moreover, this combination of parts which comes the nearest to perfection in refined and ideal art? For, thus combining what is excellent in art with what possesses character in nature, the most distinguished works have been produced in painting, poetry, and sculpture.

In following this system of combination I had the singular good fortune, by your lordship's liberality, to select from the first productions of sculpture which ever adorned the world in that department in art, which neither Raphael nor any of the distinguished masters had the advantage to see, much less to study since the revival of art. I may therefore declare with truth, my lord, that I am the first in modern times who have enjoyed the much-coveted opportunity, and availed myself of the rare advantage of forming compositions from them by adapting their excellences to poetic fictions and historical facts.

**The Financial Board of Cambridge University** propose to borrow 70,000*l.* for the new buildings, of which the estimated cost is as follows:—Chemical laboratory, 30,000*l.*; Sedgwick Museum, 12,000*l.*; for physiological department, 10,000*l.*; and anatomy and medical school, 10,000*l.* Additional buildings will also be required for the library as well as other literary departments.



#### The Ashpitel Prize.

SIR,—At the Institute meeting held on the 4th inst., Professor Kerr asked "why the Ashpitel prize had been withheld from the best of the seventeen candidates who had passed the examination for Associateship during 1884?" Mr. Arthur Cates, in replying, "expressed regret that the Council for two years had been unable to recommend any candidate as worthy of being honoured by this distinction—a distinction which, if lightly given, would discredit the prize itself. It is the most distinguished honour which any candidate can receive; it is an honourable distinction which should not be lightly thought of, but should be secured by a recipient worthy of the honour of being designated in the list of members as Ashpitel prizeman."

This prize was instituted about 1873, and it has only been awarded four times in these twelve years, viz., in 1873 to Hugh Stannus; in 1877 to F. T. Baggallay; in 1879 to Bruce John Capel, and in 1882 to Thomas Purves Marwick.

The prize has now assumed considerable importance. It is given to the candidate "who, in the opinion of the Council, most highly distinguishes himself in the examinations for the degree of Associate held during each year." It is thus the most important prize in the gift of the Council. The examination for the Associate degree embraces all the branches of an architect's training, and it follows that the man who all over is the most distinguished Associate of his year attains a highly honourable position, and one not easily gained.

For this high honour the Council award a prize of books valued at 10*l.*, while for essay-writing they give a medal and 25*l.*, for design a medallion and 50*l.*, and for sketching a medal and 40*l.* Medals are given with nearly all the prizes in the gift of the Institute—the Soane, Grissell, Pugin, and Godwin prizes, as well as those for essays and measured drawings.

I venture to affirm that the medal is the most popular form of award, and I would suggest to the Council the propriety of adding a medal to the Ashpitel prize. I am perfectly sure that candidates going up for examination would prepare themselves thoroughly to compete for this distinction. At present they give the minimum study in order to pass. Give an object to strive for in the shape of a good prize, accompanied by a tangible record, like a medal—which one can show—and you will not only give a zest to those preparing for examination, but you will increase the number of candidates for the degree. The cost would be trifling, and I don't think that on another occasion Mr. Cates would have reason to complain at the lack of worthy candidates.—I am, sir, &c.,

A. B. C.

London: May 7, 1885.

#### LEGAL.

##### Carlisle County Court, May 5.

(Before Mr. INGHAM, Judge.)

OLIVER *v.* JOHNSON.—ARCHITECTS' FEES.

In this case Mr. G. D. Oliver, architect, sued Mr. Thomas Johnson, solicitor, Bank Street, for a sum of 7*l.* 7*s.* for professional services. The plaintiff said the account was incurred in the valuation of some property in Rickergate and Peter Street, belonging to Mr. Dennis McCauley, innkeeper. Mr. Errington, for the defence, said the order had come from Mr. McCauley, and the work was done for him. The plaintiff stated that his original charge for the appraisement of the property was 18*l.* 15*s.*, but when he applied to the defendant for payment he was told by him that he had never got a farthing from Mr. McCauley, and, as his (the defendant's) fees would have to come out of his own pocket, Mr. Oliver consented to reduce his account to 7*l.* 7*s.* He was told by Mr. Johnson to value the property, as he wanted to send the valuation to a client in Cockermouth. He admitted that Mrs. McCauley had first seen him on the subject, and had told him to go and see Mr. Johnson about it.—His Honour: This is Mrs. McCauley ordering you.—Mr. Oliver stated that he sent in his bill to Mr. Johnson on October 13, 1883, and Mr. Errington pointed out that Mr. McCauley had become bankrupt in September of that year, adding that his defence was this—that the defendant was acting as agent for a disclosed principal, and was merely instructed as an agent.—His Honour: This Court happens to know that Mrs. McCauley is a very important individual. I have always been inclined to look upon Mrs. McCauley as Mr. McCauley. She has done all sorts of things relating to business matters, signed cheques, &c.—Mrs. McCauley was then sent for, and at a later stage she appeared in Court, but her evidence was not taken, the defendant himself going into the witness-box, and stating that Mr. and Mrs. McCauley had three mortgages on



the property, and they came to him and asked him if he could consolidate these mortgages. He thought he could through a client in Cockermouth; but, as a first step, it was necessary to have the property valued, and he recommended to them for this purpose Mr. Oliver. He himself never gave Mr. Oliver orders to do it, but he was not aware whether it was Mr. or Mrs. McCauley who had given instructions.—His Honour, addressing the plaintiff, said he was afraid there was a very slight prospect of his getting paid by anybody. He understood that there was no dividend on the estate.—In cross-examination, the defendant stated that he had had several letters from Mr. Oliver about the account, but never took any notice of them, as he did not consider that he was liable.—His Honour directed that judgment should be entered for defendant, without costs.—Mr. Errington: Perhaps your Honour will strike out the case, and save plaintiff the hearing fees.—His Honour: I cannot do that.

### CHURCH BUILDING AND RESTORATION.

**Acaster Malbis.**—A portion of the restoration of the parish church has been carried out under the direction of Mr. C. Hodgson Fowler, of Durham. Funds are being raised to complete the work of restoration.

**Langley.**—This church has been reopened after restoration. The work has been carried out by Messrs. Bardell Bros., of King's Lynn, under the direction of Mr. Ewan Christian.

**Rettendon.**—A Congregational mission chapel has been opened. The building has been erected by Mr. F. Johnson, of New Street, Chelmsford, from the designs of Mr. Charles Pertwee, architect, of Chelmsford.

**Durham.**—The contract for the new Congregational church has been let to Messrs. Geo. Gradon & Son, of that city, for 3,480*l.*, and the works are now in progress. The foundation-stone is to be laid by Sir Farrer Herschell, Q.C., M.P., Solicitor-General, on the 3rd of next month. The whole of the works will be carried out from the designs and under the superintendence of Mr. H. T. Gradon, architect, of Durham.

**St. Paul's Church, Stockton-on-Tees.**—This church was consecrated last Monday. It is in the Early English style, and is designed with nave and aisles, chancel, organ chamber, and two vestries, and has a bell gable at the west end. The walls are faced inside and out with buff-coloured bricks, relieved by bands and quoins of red brick, and having the dressings round windows and doors of white stone. The whole of the wood work is of pitch pine. The chancel and gangways are paved with mosaic tiles. The windows are glazed with cathedral-tinted glass, having borders of rich tints and bands of roundels. The accommodation is for about 450 adults, and the cost is about 2,800*l.* The architect is Mr. J. P. Pritchett, of Darlington.

**Tunstall.**—Christ Church, Tunstall, has been reopened after enlargement. The work has been carried out in two contracts, the second being a restoration of the old fabric. The extension consists of a chancel, two transepts, a side chapel, and vestry with parish room over. The nave has been extended eastward about 8 feet. The work has been executed from the plans of Mr. A. R. Wood, architect, Tunstall. The first contract was taken by Mr. John Proctor, of Tunstall, at 2,200*l.*, and the contract for the restoration of the old portion by Mr. Charles Smith, of Tunstall, the amount being 800*l.* The stonework is by Mr. T. Ford, jun., Tunstall. Messrs. Jones & Willis supplied the ironwork and lectern, Mr. Buckley, of Goldenhill, the communion-table, and Messrs. Williams, of London, executed the glazing.

**Sulgrave.**—The parish church has been reopened after restoration, which has been carried out from the plans of Mr. J. Piers St. Aubyn, of the Temple, London, by Messrs. Isaac Wootton and Richard Taylor, of Sulgrave. The cost of the work has been about 1,910*l.*, and the church will now seat 250 persons.

**Pocklington.**—The porch of the old church of Pocklington has been restored, from the designs of Mr. Smith Brodrick, of Hull, by Mr. T. Grant, builder, of Pocklington. Amidst the timbers of the old porch were discovered a raven's nest containing a number of coins, several of them being monastic tokens.

### SCHOOL BUILDINGS.

**Birmingham.**—The foundation-stone of an extensive addition to the Wycliffe Sunday School, St. Luke's Road, has been laid. The architects are Messrs. Ingall & Hughes, and the builder Mr. Thomas Rowbottom. It is estimated that the cost of the buildings, with fittings, &c., will be about 2,000*l.*

**Huddersfield.**—The Huddersfield Board School at Oakes, Lindley, is being extended by the erection of an extra department for 350 children, and a room for teaching cookery to fifty girls, together with a covered playground. The works are

being carried out from plans and designs by Mr. Benjamin Stocks, architect, Huddersfield, at a cost of 4,600*l.*, exclusive of fittings.

**Stafford.**—The foundation-stone of the Eastgate Schools, Stafford, has been laid. The school buildings, which when completed will accommodate 226 children, consist of a school-room, 78 feet by 19 feet; class-room, 20 feet by 16 feet 6 inches; hat and cloak-room; and separate entrances for each sex and the necessary offices. An apsidal chancel will also be provided in case the buildings should at any time be used for religious services. The style of architecture adopted is Gothic; the walls will be of red brick with white Alton stone dressings, and the roofs will be covered with Broseley tiles. The contractor is Mr. F. Espley, and the architect Mr. Robert Griffiths, of Stafford.

### NEW BUILDINGS.

**Manchester.**—The memorial-stones of a Methodist central hall have been laid. The cost of the buildings is estimated at something over 20,000*l.* The architects are Messrs. Woodhouse & Morley, of Bolton and Bradford.

**Harrogate.**—The new premises in James Street for the Bradford Old Banking Company consist of a central block, to be used for bank business purposes and manager's residence, with wings on each side for general business premises and residences in connection. The architects are Messrs. H. E. & A. Bown, of Harrogate; the contractors are Messrs. Longley Bros., of Leeds; Mr. Fletcher, of Manchester, clerk of works. The strong room and strong vault are fitted with Chubb's fire and burglar-proof steel doors and grids.

**Worcester.**—A costly and elaborate clock tower, erected by Mr. Jones in his grounds at Abberley Hall, has been opened. It is in the Early English style; is 161 feet in height, 25 feet square, tapering to 23 feet above the plinth, which is 99 feet from the ground. The wall is of the local grey sandstone, quarried on the estate, relieved with Alveley red sandstone and yellow oolite from Ham Hill, near Yeovil. On the fourth of the nine stages is an oriel chamber, from which a fine view of the country for many miles round is obtained. The clock was furnished by Mr. Joyce, and the bells by Messrs. Taylor Bros., of Loughborough. Mr. J. P. St. Aubyn is the architect.

### GENERAL.

**The Marquis of Lorne** will open the summer exhibition of the Yorkshire Fine Art Institution on June 11.

**Mr. G. C. Ashlin, A.R.H.A.,** has offered a prize of 10*l.* for the best statue in Caen stone suitable for an altar which will be shown in the Irish Artisans' Exhibition. The Royal Institute of Architects (Ireland) have announced an intention of making a grant towards the prizes.

**M. Bouguereau** has been elected president of the French Association of Artists in succession to the late M. Sommerard. He received 45 votes; M. Roger-Ballu obtained 42.

**The Members** of the Sketching Club of the Leeds and Yorkshire Architectural Society commenced the summer session with a visit to Selby on Saturday, where, under the guidance of Mr. T. S. Ullathorn, they had a very pleasant ramble over the old Abbey Church. A few interesting sketches were made by the members. Messrs. F. W. Bedford, J. Dixon, J. H. Greaves, F. Haigh, J. Hall, W. Hill, C. B. Howdill, C. G. Page, J. W. Twist, T. S. Ullathorn, and A. Whitehead (hon. sec.) were of the party.

**A Bazaar** has just been held at Stourbridge in aid of the fund for building a spire to Lye Church.

**A Bazaar** was opened at Poplar on Monday by H.R.H. Princess Christian, in order to raise funds for the erection of the new Mission House in Giraud Street, which is to be erected from the designs of Mr. B. A. Elphicke, of London and Tunbridge Wells.

**The Paisley Town Council** on Tuesday last agreed to rescind the motion for the erection of municipal buildings in High Street and St. Morren Street.

**A British Textile Institute**, on the model of the Iron and Steel Institute, is about to be formed, and a committee appointed to consider a scheme has drawn up a constitution and code of rules. Applications for Fellowships can be obtained on application to Mr. Ashenhurst, Technical College, Bradford.

**Designers** for all classes of needlepoint lace, cut cambric, and linen crochet work, &c., are invited to compete for prizes, amounting in value to 73*l.* 10*s.*, which are offered with a view of obtaining designs which may be distributed to and executed by Irish lace makers. Designs must be submitted for competition on or before July 15, 1885. They should be addressed to Mr. Alan S. Cole, Hon. Treasurer Irish Lace Prize Fund, South Kensington Museum, of whom all information may be obtained.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MAY 16, 1885.

## TRADE NOTES.

A MUNICH window, representing Charity, has just been erected in the south transept of St. Peter's Church, Cranley Gardens, Kensington, the gift of Mr. C. Dalrymple, M.P., the inscription at the foot recording the fact that it has been placed "To the memory of Alice Mary Dalrymple, September 2, 1884." The work is by Mayer & Co.

MESSRS. CARTER & Co., of the Encaustic Tile Works, Poole, Dorset, have lately completed a hand-painted tile panel, representing a scene from Shakespeare's life, with majolica dado and mouldings, and also a marble mosaic floor to the entrance lobby of the premises of the Blackfriars Distillery Company, in Blackfriars Road. The scene, as depicted in the panel, shows Shakespeare and Ben Jonson in the old Blackfriars Inn, and it has consequently a local appropriateness. It is a very effective piece of decoration, and we understand the firm are extending this particular branch of their business. Shakespeare and Ben Jonson are engaged apparently in a deeply interesting argument, or in one of their wit combats, which fascinated their hearers. The youthful sportsman and the damsels are grouped about in respectful silence, awed by the brilliant words which probably were often beyond their comprehension. Additional solemnity is imparted to the scene by the presence of a friar, who also displays his interest in the conversation. Mine host is a perfect representation of the jovial landlord as he approaches his guests with flagon and tankards. The framing of the panel and dado is also good and effective, and Messrs. Carter & Co. are to be commended for having gone somewhat out of the beaten track, and succeeded so well.

STEVEN BROS. & Co., architectural, sanitary, and general ironfounders, 35 and 36 Upper Thames Street, E.C., have now secured the lease of new and extensive premises at No. 4 Upper Thames Street, London, E.C., opposite the *Times* office, Queen Victoria Street, E.C., and after they complete their extensive alterations, will be able to have on show the largest stock in London of hot-water baths and fittings, ranges, slow-combustion stoves, marble chimney-pieces, marble kerbs, tiles and tile hearths, stable fittings, ornamental gates, railings, verandahs, &c., &c. Owing to the large and ever-increasing demand for their superior manufactures, this well-known firm has made such rapid strides in the iron trade, that it has become absolutely necessary for them to remove their enormous stock to warehouses where it may be seen to better advantage than has hitherto been the case, owing to want of space at their present address.

BLUNDELL'S PETRIFYING LIQUID.—Amongst the preparations now before us for preventing damp from making its appearance on interior walls, that of Messrs. Blundell, Spence & Co. holds a high position. Its powers of resisting damp are remarkable, and, unlike most of these preparations, it is made in two colours, white and red, is applied as easily as paint, and dries with a glazed surface. From this standpoint

it may fairly take the place of glazed bricks, and at a considerable less cost, while it offers little chance for the accumulation of dirt, the enamelled surface enabling it to be washed whenever necessary. It can be applied with equally good effect to metal, wood, cement, brick, &c., and its cost is but trifling. There should be no difficulty in obtaining the preparation, as from the extensive ramifications of the firm the majority of dealers in paints and varnishes keep it in stock.

MESSRS. WM. WOOLLAMS & Co., manufacturing paperstainers, of 110 High Street, near Manchester Square, W., original makers of non-arsenic papers, exhibit at the Furniture Trades Exhibition a variety of artistic wall and ceiling papers, all free from arsenic; *inter alia*, the "Rialto," a large Italian damask pattern, designed by Miss Louisa Aumonier; the "Fig," an Italian brocade pattern in six different coloured flocks, on brocaded gold ground, by A. Silver; the "Nuremberg," a German Renaissance design, drawn by E. Wildey, from an old example; the "Leywid," an original design by the same artist, in red flock, both these being extra widths and lengths; the "Umbria," an early Italian design, drawn by G. C. Haité; the "Savoy," dado decoration, Adams' style, designed by A. F. Brophy; the "Floral Ethics," dado decoration, conventional flowers, &c., designed by C. F. A. Voysey; the "Milo," Italian damask, extra width and length, designed by Miss L. Aumonier; in yellow flock and in terra-cotta; the "Widford" decoration, designed by O. K. Rickatson, with panelled dado; the "Night Blooming Cereus," dado decoration, designed by C. F. A. Voysey; the "Rush," dado decoration, designed by Owen W. Davis and Reuben Bennett; the "Turin," dado decoration, designed by G. C. Haité; the "Siri," Japanese chintz pattern, designed by F. J. Weidemann; and the "Padua," an Italian all over filling with border and dado, designed by H. Noble, the frieze by Miss Louisa Aumonier. The foregoing are the chief wall-papers shown so far as the space occupied by each is concerned, but there are also numerous examples of raised flocks on coloured grounds, patent embossed flocks in relief, with designs richly modelled in coloured flocks, finished without painting over, and a large and varied collection of patterns in books and on stands, the latter including the private designs of Mr. J. Adam Heaton, for whom Messrs. Wm. Woollams & Co. are trade agents and printers. Messrs. Wm. Woollams & Co. invite special attention to the specimens of "Tergorine," a new material patented, now exhibited for the first time, which they have the sole right to apply to wall-hangings. It is embossed in various patterns in imitation of stamped leather, and examples are shown decorated in a variety of styles mostly washable. It takes and retains an admirable impression; it is entirely different in its artistic effect from any other material hitherto employed for similar purposes, and is quite free from any objectionable odour, while it is exceedingly tough and believed to be as durable as real leather, of which it is largely composed.

## COMPETITIONS OPEN.

BLACKPOOL.—May 20.—Applications are invited for the Office of Borough Surveyor. Salary 300*l.* per annum. Mr. T. Loftos, Town Clerk, Blackpool.

NORWICH.—May 20.—Applications are required for the Appointment of a City Surveyor. Salary 200*l.* per annum. Mr. H. B. Miller, Town Clerk, Norwich.

SHEERNESS.—May 20.—Applications are required for the Appointment of a Surveyor. Mr. Vincent H. Stallon, Trinity Road, Sheerness.

WEDNESBURY.—May 21.—Applications are required for the Appointment of a Town Surveyor. Salary 200*l.* per annum. Mr. J. Smith, Local Board Offices, Wednesbury.

## CONTRACTS OPEN.

ABERDEEN.—May 19.—For Building House at Pardes Daviot. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

ABERDOUR.—May 21.—For Additions to Orphanage. Mr. Alex. Ross, Architect, Inverness.

ABERLOUR.—May 16.—For Additions to Beurnes Distillery, Aberlour. The Manager.

ALNWICK.—May 21.—For Additions and Alterations. Mr. C. E. Moore, *Gazette* Office, Alnwick.

ALNWICK.—May 23.—For Building Bridge over Tyelaw Burn. Mr. C. Percy, Clerk to the Highway Board, Alnwick.

ALVES.—May 19.—For Alterations and Repairs to Farm Buildings. Messrs. A. & W. Reid, Architects, Elgin.

ARMLEY.—May 16.—For Building Two Dwelling-houses, Stabling, &c. Mr. Henry Marsden, Architect, 365 Sticker Lane, Bradford.

AUGHNACLOY.—May 20.—For Repewing, &c., Parish Church. Mr. R. J. Betty, Aughnacloy co. Tyrone.

BANDON.—June 8.—For Construction of Water Works. Mr. James Price, C.E., 44 Harcourt Street, Dublin.

BARNET.—May 23.—For Construction of Road (1,650 feet) with Kerb. Messrs. W. & F. Houghton, Surveyors, 61 Old Broad Street, E.C.

BASSENTHWAITE.—May 18.—For Alterations and Additions to Farm Buildings. Messrs. J. M. Richardson & Sons, 18 Bank Street, Carlisle.

BRISTAL.—May 21.—For Building Large Wesleyan Schools. Mr. Walter Hanstock, A.R.I.B.A., Branch Road, Batley.

BOOTLE.—May 19.—For Building Additional Offices, &c., Stone Piers, Chains, and Brick Walls in connection with Town Hall. Mr. J. Alexander, Borough Surveyor, Town Hall, Bootle-cum-Linacre.

BRADFORD.—May 20.—For Building Board School, Thornton Lane. Mr. C. H. Hargreaves, Architect, Bank Street, Bradford.

BRENTWOOD.—May 16.—For Building Cottage at Carnsland. Mr. F. Whitmore, Architect, 22 Duke Street, Chelmsford.



**BRIGHOUSE.**—May 21.—For Laying Brick Sewer. Mr. G. Hepworth, Surveyor to the Local Board, Bradford Road, Brighouse.

**BUNDORAN.**—May 20.—For Excavation of Channel in Rock (400 feet), Construction of Boat Slip and Platform, Landing Quay (165 feet), and Inclined Approach. Plans, &c., at the Office of Public Works, Dublin.

**BURTON-ON-TRENT.**—May 22.—For Enlargement of County Court. Mr. A. B. Mitford, H.M. Office of Works, 12 Whitehall Place, S.W.

**CASTLE DONINGTON.**—For Building Villa. Mr. H. Sulley, Architect, Wheelergate, Nottingham.

**CHEDDLETON.**—May 18.—For Additions and Alterations to Churnet Grange. Messrs. W. Sugden & Son, Architects, Leek.

**CHIGWELL.**—May 19.—For Building Boys' School and Master's House. Mr. Edmond Egan, Architect, Loughton, Essex.

**CHRISTCHURCH.**—May 28.—For Building Schools for the Guardians of the Poor. Mr. Edgar H. Burton, Architect, Bournemouth.

**CLAYTON.**—May 21.—For Building Villa Residence, Stabling, Out-offices, &c. Mr. J. Drake, Architect, Winterbank, Queensbury.

**COLCHESTER.**—May 21.—For Building House in North Street. Mr. W. Scargill, Architect, 31 North Street, Colchester.

**COLCHESTER.**—May 19.—For Flooring and Bookcases at Museum and Castle. Mr. Charles Clegg, Borough Surveyor, Stanwell Street, Colchester.

**COLNE AND MARSDEN.**—May 25.—For Forming Brick Barrel Sewer; Building Piers, to carry a wrought-iron Trough; the Raising of an Occupation Road; Laying Iron and Earthenware Pipes, 960 yards. Mr. Henry Bancroft, C.E., 83 Mosley Street, Manchester.

**CORNWALL.**—May 19.—For Construction of the Chasewater and Blackwater Railway Viaducts. The Engineer, Paddington Station.

**DARTFORD.**—May 23.—For Building Machinery House for Electric Lighting of Hospital Ships at Long Reach. Messrs. H. Jarvis & Son, Architects, 29 Trinity Square, S.E.

**CROYDON.**—May 19.—For Re-slating, Repairing, and Painting Slaughter-houses. The Borough Engineer, 8 Katherine Street, Croydon.

**DERBY.**—May 18.—For Building Prison Officers' Quarters. Mr. Thomas Coulthurst, Borough Engineer, Municipal Offices, Babington Lane, Derby.

**DERBY.**—May 16.—For Building Nineteen Cottages. Mr. Lawrence Bright, Architect, 9 St. Peter's Church Walk, Nottingham.

**DONCASTER.**—May 20.—For Additions and Alterations to the Yorkshire Bank. Messrs. Wilson & Masters, Architects, Hartshead Chambers, Sheffield.

**DONCASTER.**—May 29.—For Alterations and Additions to Congregational Church. Mr. C. J. Innocent, Architect, 17 George Street, Sheffield.

**DUNNERDALE.**—For Additions to Ball Hall. Messrs. Settle & Farmer, Architects, Ulverston.

**EDROM.**—For Additions and Repairs to Parish Church. Messrs. Hardy & Wight, Architects, 7 St. Andrew Square, Edinburgh.

**FLOOKBURGH.**—May 20.—For Building Farm-house. Mr. Joseph Greenwood, Rosthwaite, Cark, Carnforth.

**FOLKESTONE.**—May 22.—For Building Wesleyan Methodist School for Girls. Messrs. Ruck, Son & Smith, Architects, Maidstone.

**HALIFAX.**—May 21.—For Building Shops at Cross Hills. Messrs. Jackson & Fox, Architects, 22 George Street, Halifax.

**HALIFAX.**—May 23.—For Building Villa, Coach-house, Stables, &c. Mr. Chas. F. L. Horsfall, Architect, Lord Street Chambers, Halifax.

**HANLEY.**—For Building Villa Residence at Birches Head. Mr. G. W. Bradford, Architect, Miles Bank Chambers, Hanley.

**HARROGATE.**—May 20.—For Building Club, Victoria Park. Messrs. H. E. & A. Bown, Architects, James Street, Harrogate.

**HELME.**—May 28.—For Building Residence, Stable, Coach-house, &c. Messrs. John Kirk & Son, Architects, Huddersfield.

**HEREFORD.**—May 26.—For Additions, Clergy Vicarage, near Hereford. Messrs. Nicholson & Son, Architects, Hereford.

**HOLBORN.**—May 19.—For Building Board-room and Offices, Dispensary, and Relief Offices, Clerkenwell Road. Messrs. H. Saxon Snell & Son, Architects, 22 Southampton Buildings, W.C.

**JARROW.**—May 16.—For Building Premises and Houses. Mr. J. Walter Hanson, Architect, South Shields and Jarrow-on-Tyne.

**KEIGHLEY.**—For Supply and Erection of Six Purifiers with Valves, Connections, &c., together with Buildings for same. Mr. J. Laycock, Engineer, Municipal Offices, Keighley.

**KEIGHLEY.**—May 21.—For Building School Classrooms, &c., and Additions to Baptist Chapel at Sutton. Messrs. Petty & Ives, Architects, Waterhouse Street, Halifax.

**KILKEEL.**—May 20.—For Extension of Pier (200 feet), Altering Walls, Enlarging Basin, Construction of Wharfs, Boat Slips, Groins, &c. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**KINGSWEAR.**—May 20.—For Building Caretaker's House, Mortuary, &c., at Burial Ground. Mr. E. Appleton, Architect, 1 Vaughan Parade, Torquay.

**KNIGHTON.**—May 20.—For Erection of Workhouse Buildings. Mr. Edwin H. Deacon, Clerk to the Guardians, Knighton, Radnorshire.

**LEAMINGTON.**—May 18.—For Repairs and Alterations to Dormer Villa. Mr. F. Foster, Architect to the School Board, Euston Place, Leamington.

**LEAMINGTON.**—May 23.—For Building St. Nicholas Parish Rooms and Sunday Schools. Mr. J. Cundall, Architect, 90 The Parade, Leamington.

**LEEDS.**—May 19.—For Supply of Untrapped Earthenware Gulleys. The Town Clerk, Leeds.

**LEEDS.**—For Iron Railing, Urinals, and Dwarf Wall for Cattle Market. The Borough Engineer, Municipal Buildings, Leeds.

**LISBURN.**—May 22.—For Construction of Gasholder Tank. Mr. John McClure, Secretary, Lisburn.

**LLANELLY.**—May 18.—For Building Infant School, &c, at Lakefield. Mr. E. H. Lingner Barker, Architect, 6 King Street, Hereford.

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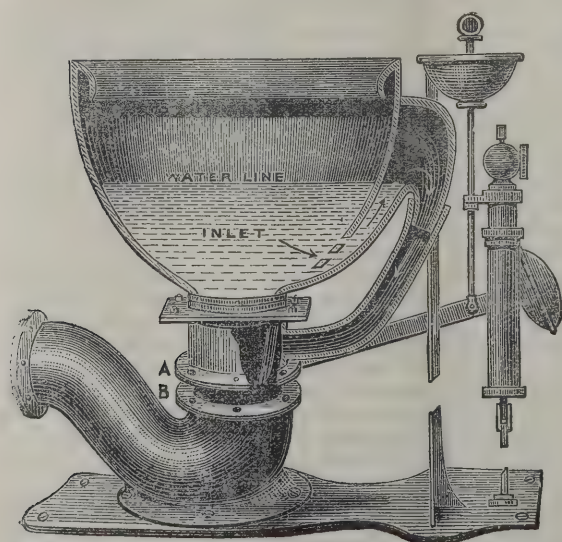
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This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast iron trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the india-rubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the system of having a weepin pipe from the supply to the Lead Trap fixed in the box of Closet, thereby being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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**LONG EATON.**—May 23.—For Building Two Cottages, with Out-offices, Boundary Walls, &c., on Sewage Farm. Mr. John Sheldon, Architect, Market Place, Long Eaton.

**MARSDEN.**—May 20.—For Building Warehouse and Coal Shed and Extension of Mill and Boiler House. Mr. R. Bower, Architect, Dirker, Marsden.

**MARYPORT.**—May 23.—For Converting Out-buildings, at Flimby Lodge, into Vagrant Wards. Messrs. Eaglesfield & Son, Architects, Maryport.

**MENSTON.**—May 16.—For Building Wesleyan Chapel. Mr. Herbert Isitt, Architect, Sunbridge Road, Bradford.

**MIDDLESBROUGH.**—May 19.—For Extensive Alterations to County Hotel. Mr. R. Moore, Architect, 7 Albert Road, Middlesbrough.

**MOULSHAM.**—May 21.—For Enlarging and Altering National Schools. Mr. Charles Pertwee, Architect, Bank Chambers, Chelmsford.

**NEATH.**—May 25.—For Constructing Wooden Bridge over River at Aberdulais. Mr. James Kempthorne, Dyffryn Chambers, Neath.

**NEWPORT.**—May 20.—For Construction of Two Improved Beale's Patent Gas Exhausters. The Engineer, Gas Offices, Mill Street, Newport, Mon.

**NORMANTON.**—May 28.—For Building Two Shops and Dwelling-houses, with Offices, Warehouse, Landing-stage, Coach-house, Stable, &c. Mr. Thomas Reid, Architect, Normanton.

**NOTTINGHAM.**—May 28.—For Constructing and Laying-out Cattle Market, Eastcroft, including Bridge, Offices, Lodges, &c. Mr. A. Brown, Borough Engineer, Municipal Offices, Nottingham.

**OLDHAM.**—For Alterations to Co-operative Stores. Messrs. Wild, Collins & Wild, Architects, 15 Clegg Street, Oldham.

**OSWALDKIRK.**—May 22.—For Restoration of Church. Mr. C. Hodgson Fowler, F.S.A., Architect, The College, Durham.

**PENZANCE.**—May 18.—For Erection and Completion of Six Shops and Stores in Market Street. Mr. J. Wm. Trounson, Architect, Penzance.

**PENZANCE.**—For the Erection and Completion of the West Cornwall Ladies' College, Abbey Street. Mr. John Trounson, Architect, Penzance.

**PETERBOROUGH.**—May 20.—For Building House. Mr. H. M. Townsend, Architect, The Precincts, Peterborough.

**PONTYPRIDD.**—June 2.—For Additions and Alterations to Union Workhouse. Messrs. James, Seward & Thomas, Architects, St. John's Chambers, Cardiff.

**QUEENSTOWN.**—May 18.—For Alterations and Additions to Business Premises. Mr. W. C. Ryder, Architect, 13 South Mall, Cork.

**REDRUTH.**—May 29.—For Building Board Schools at Trewirgie. Messrs. G. B. Nichols & Sons, 59 Colmore Row, Birmingham.

**RUGBY.**—May 18.—For Building Dining-room over Refreshment-house at Cattle Market. Mr. W. Stewart, Surveyor, Windmill Lane, Rugby.

**Salisbury.**—For Rebuilding Taylor's Almshouses. Messrs. J. Harding & Son, 51 Canal, Salisbury.

**SEDBERGH.**—May 22.—For Alterations and Additions to Farfield. Mr. S. Shaw, Architect, Kendal.

**SHEFFIELD.**—May 25.—For Building Sunday School, with Class-rooms, &c. Mr. C. J. Innocent, Architect, 17 George Street, Sheffield.

**SHERBORNE.**—May 18.—For Construction of Covered Reservoir and Valve Well; Providing and Laying 8,500 yards of Cast-iron Pipes, with Special Castings, &c.; Sluice Valves, Hydrants, and other Fittings; and other Works. Mr. James Mansergh, 3 Victoria Chambers, Victoria Street, London, S.W.

**SHIPLEY.**—May 18.—For Building Wesleyan Minister's House. Messrs. John Crabtree & Son, Architects, 30 Thompson Street, Shipley.

**SHREWSBURY.**—May 22.—For Repairs, &c., to Tower of St. Alkmund's Church. Mr. J. Nurse, Architect Dogpole, Shrewsbury.

**SOOTHILL.**—May 20.—For Building Schools, Outbuildings, &c. Mr. H. B. Buckley, Architect, Old Vicarage, Batley.

**SOUTHAMPTON.**—For Rebuilding the Gaiety Music Hall. Mr. William Burrough Hill, Architect, Southampton.

**ST. HELENS.**—May 19.—For Building Branch Police Station. Mr. G. J. C. Broom, Borough Surveyor, Town Hall, St. Helens.

**STAFFORD.**—May 18.—For Supply of Cast-iron Gas Pipes and Irregular Castings, for Twelve Months. Mr. J. F. Bell, Gas Engineer, Stafford.

**STONE.**—For Building Ten Cottages. Mr. Ambrose Wood, Architect, Regent House, Hanley.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**THIRSK.**—May 25.—For Building Courthouse and Making Alterations to Police-station. Mr. Walker Stead, C.E., Courthouse, Northallerton.

**WALTHAMSTOW.**—May 29.—For Construction of Wooden Troughing, Staging, &c. (1,700 feet), at Sewage Farm. Mr. G. B. Jerram, Engineer, Town Hall, Walthamstow.

**WARDLE.**—May 20.—For Erection of Club Buildings. Mr. Thomas Holt, Architect, Market Street, Whitworth.

**WELLINGTON.**—May 21.—For Building Warehouse and Offices. Mr. E. T. Howard, Architect, North Street, Wellington, Somerset.

**WEST VALE.**—May 22.—For Building House. Mr. W. H. D. Horsfall, Architect, Albany Chambers, Commercial Street, Halifax.

**WHITTINGHAM.**—May 18.—For Building Hospital for Infectious Cases. Mr. Lawrence Booth, Architect, 28 Faulkner Street, Manchester.

**WIGAN.**—May 19.—For Alterations to Roof of Christ Church, Parbold. Messrs. Isitt & Verity, Architects, Wigan.

**WORKINGTON.**—May 23.—For Building Infirmary. Mr. George Dale Oliver, Architect, Pow Street, Workington.

**WORTHING.**—May 22.—For Building Four Cottages, Watch-room, Boat-room, Store, &c. The Director of Works Department, Admiralty, 71 Spring Gardens, S.W.

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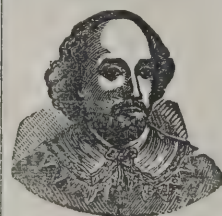
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## TENDERS.

## ABERDOUR.

For Alterations to Parish Church of Aberdour. Messrs. ELLIS & WILSON, Architects, 34 Bridge Street, Aberdeen. Quantities by the Architects.

Davidson, New Pitsligo, mason.  
Anderson, Johnshaven, carpenter.  
Merson, Strichen, slater.  
Roger & Baxter, Aberdeen, plasterer.  
Gunn & Elder, Aberdeen, plumber.  
Chalmers, Banff, painter and glazier.  
Amount of estimates, exclusive of heating apparatus, £698 4s.

## ARELEY KINGS.

For Restoration and Enlargement of the Parish Church, Areley Kings (including Pulling-down present Nave, and Rebuilding it with an Additional Aisle).

|                             |        |   |   |
|-----------------------------|--------|---|---|
| Wood, Worcester             | £2,354 | 0 | 0 |
| Collins, Tewkesbury         | 2,240  | 0 | 0 |
| Inwood, Malvern             | 2,270  | 0 | 0 |
| Horseman, Wolverhampton     | 2,294  | 6 | 3 |
| Claridge, Banbury           | 2,380  | 0 | 0 |
| Wall & Hook, Stroud         | 2,630  | 0 | 0 |
| BINNAN & SON, Kidderminster | 2,190  | 0 | 0 |
| (accepted)                  |        |   |   |

## AYLESBURY.

For Building Three Pairs of Cottages, at the Bucks County Lunatic Asylum, Stone, near Aylesbury. Mr. F. W. TAYLOR, County Surveyor and Architect, Aylesbury.

|                                 |        |   |   |
|---------------------------------|--------|---|---|
| Crook, Waddesdon                | £1,260 | 0 | 0 |
| Cooper & Co., Aylesbury         | 1,155  | 0 | 0 |
| Holland, Thame                  | 1,125  | 0 | 0 |
| Mayne & Ball, Aylesbury         | 1,023  | 0 | 0 |
| GIBSON, High Wycombe (accepted) | 997    | 0 | 0 |

## ABINGDON.

For Erection of Corn Exchange, Abingdon, Berks. Mr. CHARLES BELL, Architect. Quantities by Mr. Henry Lovegrove, 26 Budge Row, E.C.  
Williams, Abingdon. £2,057 0 0

## ABINGDON—continued.

For Erection of a Cottage Hospital (including Fittings), Abingdon. Mr. C. BELL, Architect. Quantities by Mr. Henry Lovegrove, 26 Budge Row, E.C.  
Buckle & Wheeler, Abingdon. £1,448 0 0

## BALTINGLASS.

For Building Dispensary, Residence, &c., at Rathvilly, for the Guardians of Baltinglass Union. Mr. H. R. NEWTON, Architect, 202 Great Brunswick Street, Dublin.  
Crampton, Dublin. £1,523 0 0  
Moran, Dublin. 1,397 0 0  
Brelan, Dublin. 1,302 0 0  
Breslau, Dublin. 1,300 0 0  
Pemberton, Dublin. 1,297 0 0

## BIRSTALL.

For Building Dwelling-house and Shop, Market Place, Birstall, for Mr. J. G. Lister. Mr. WM. ELLIS, Architect, Heckmondwike. Quantities by the Architect.

## Accepted Tenders.

|                               |     |    |   |
|-------------------------------|-----|----|---|
| Akeroyd & Son, mason          | 285 | 0  | 0 |
| Yates, joiner                 | 145 | 0  | 0 |
| Lister, plumber               | 35  | 0  | 0 |
| B. & J. Leadbeater, plasterer | 28  | 15 | 0 |
| Thornton, slater              | 22  | 11 | 0 |
| Snowden, painter              | 13  | 10 | 0 |

## BRERETON.

For Erection of Buildings at Brown Edge House, Brereton.

|                                  |      |    |   |
|----------------------------------|------|----|---|
| Martin, Congleton                | £940 | 0  | 0 |
| Stringer, Sandbach               | 821  | 16 | 0 |
| Twemlow, Sandbach                | 790  | 0  | 0 |
| Mellor, Sandbach                 | 748  | 0  | 0 |
| Poole, Congleton                 | 726  | 0  | 0 |
| Brown, Congleton                 | 700  | 0  | 0 |
| Cooke & Worrall, Congleton       | 660  | 0  | 0 |
| W. Worrall, Congleton            | 649  | 0  | 0 |
| J. WORRALL, Congleton (accepted) | 648  | 0  | 0 |

## CAMBERLEY.

For Building Residence at Camberley, Surrey, for Dr. W. H. Twort. Mr. FRED. W. ALBURY, Architect, Reading.  
HENDERSON (accepted). £958 0 0

## BOURNEMOUTH.

For Erection of Band Stand on the Pier, Bournemouth.  
Perry & Co., Bow (informal). £388 0 0  
Lawson & Donkin. 298 0 0  
Crook, Southampton (accepted). 285 15 0  
Pickfall, Taunton (informal). 274 0 0

## CANNOCK.

For Building Board School for 300 Infants at Chadsmoor, Cannock. Mr. BENJAMIN BAKER, Architect, Willenhall. Quantities by the Architect.  
G. & G. Higham, Wolverhampton. £1,842 0 0  
Lynes, Walsall. 1,337 0 0  
Reynolds, Cannock. 1,305 0 0  
Bradney & Co., Wolverhampton. 1,291 0 0  
Whitmore, Stafford. 1,281 0 0  
Wootton, Bloxwich. 1,256 0 0  
Barton, Hednesford. 1,252 0 0  
Anderson, Cannock. 1,250 0 0  
Guest, Stourbridge. 1,225 0 0  
MASON, Hednesford (accepted). 1,196 0 0

## CHILWORTH.

For Building House at Lockner Wood, Chilworth, Surrey, for Mr. St. George Mivart, F.R.S. Mr. FRED. A. WALTERS, A.R.I.B.A., Architect, 4 Great Queen Street, Westminster. Quantities by Mr. J. T. Carew, 22 Surrey Street, Strand.

## House.

|                    |        |   |   |
|--------------------|--------|---|---|
| Buckle & Wheeler   | £2,924 | 0 | 0 |
| Maides & Harper    | 2,700  | 0 | 0 |
| Tompsett & Ringham | 2,524  | 0 | 0 |
| Whitburn           | 2,440  | 0 | 0 |
| Mitchell Bros.     | 2,375  | 0 | 0 |
| Carless & Co.      | 2,267  | 0 | 0 |

## Conservatory.

|                    |     |   |   |
|--------------------|-----|---|---|
| Whitburn           | 170 | 0 | 0 |
| Maides & Harper    | 160 | 0 | 0 |
| Mitchell Bros.     | 155 | 0 | 0 |
| Tompsett & Ringham | 137 | 0 | 0 |
| Buckle & Wheeler   | 135 | 0 | 0 |
| Carless & Co.      | 127 | 0 | 0 |

ROMAN REMAINS IN ALGERIA.—A Paper will be read by ALEXANDER GRAHAM, Fellow, on this subject, at the Meeting of British Architects to be held on Monday, the 18th instant, at 8 p.m. For particulars, see the Journal of Proceedings issued on the 7th instant to Members and Correspondents.

J. MACVICAR ANDERSON, Hon. Secretary.

WILLIAM H. WHITE, Secretary.

Royal Institute of British Architects, No. 9 Conduit Street, Hanover Square, London, W.

ARCHITECTURAL ASSOCIATION,  
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Lectures on the History of Architecture.

The Ninth Lecture announced for the 15th inst. will not be delivered, but instead Mr. TAYLER has announced for a tour of inspection of examples in London on Saturday afternoon, May 23.

Students who have attended the Lectures wishing to join the Excursion are requested to send their names to Mr. E. J. TAYLER, 10 Craig's Court, Charing Cross.

A Prize will be given as usual for the best book of notes, to be sent in to Mr. TAYLER on or before September 25.

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## TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it. Yours, &c.

"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy." From Hon. and Rev. G. G. C. Talbot, M.A., Withington, Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen."

"Mr. John Grundy." From F. J. Yates, Esq., Architect, Birmingham. "The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace City Road, London. Works—TYLDESLEY, near MANCHESTER.



**BRIGHTON.**

For Building Wall to enclose the land belonging to the Corporation lying between the Lewes Road Waterworks Pumping-station and the Preston Barracks. Mr. PHILIP C. LOCKWOOD, C.E., Town Hall, Brighton.  
 Lockyer, Brighton . . . £495 0 0  
 Newnham, Brighton . . . 467 0 0  
 Longley, Crawley . . . 437 0 0  
 Hudson, Kearley & Co., Brighton 432 0 0  
 Cheesman & Co., Brighton . . . 425 0 0

**DEWSBURY.**

For Building Shop, House, &c., Dewsbury. Mr. HARRY B. BUCKLEY, Architect, Batley. Quantities by the Architect.

*Accepted Tenders.*

Hirst, mason . . . £240 0 0  
 Haigh, joiner . . . 128 0 0  
 Blackburn, plumber . . . 19 1 0  
 Binns, plasterer . . . 17 0 0  
 Thompson, slater . . . 11 0 0

Total . . . £415 1 0

**DUKINFIELD.**

For Works in Chapel Street. Mr. W. SPINKS, Surveyor, Dukinfield.

Lomax, Eccles . . . £2,719 14 0  
 Speight, Liverpool . . . 2,312 19 0  
 Heaton, Warrington . . . 2,300 0 0  
 Hayes, Bolton . . . 2,228 8 8  
 Alcock & Co., Ashton-under-Lyne . . . 2,150 9 0  
 Wortlington, Manchester . . . 2,136 0 0  
 STERLING & SWANN, Manchester (accepted) . . . 2,030 8 0

**ELLON (SCOTLAND).**

For Cottage and Workshop, to be Erected at Ellon. Mr. WM. DAVIDSON, Architect, Ellon.

*Accepted Tenders.*

Forbes, mason . . . £248 10 0  
 Brebner, carpenter . . . 168 10 6  
 Fyvie, slater . . . 72 8 0  
 Low, plasterer . . . 46 0 0  
 Walker, plumber . . . 10 15 0

**DURHAM.**

For Building Congregational Church. Mr. H. T. GRADON, Architect, 40 Sadler Street, Durham.

GRADON & SON (accepted) . . £3,480 0 0

**ELTHAM.**

For Construction of Sewers in Pope Street, Footscray Road, Southend Road, Cross Lane, and Victoria Road, for the Plumstead Board of Works.

Mowlem & Co., Westminster . £6,604 0 0  
 Bell, Tottenham . . . 6,167 0 0  
 Richardson, Southend-on-Sea . 6,048 16 2  
 Cowdrey & Sons, Newent . . . 5,907 3 3  
 Tongue, Plumstead . . . 5,837 0 0  
 Beadle Bros., Erith . . . 5,385 0 0  
 Woodhams & Fry, Greenwich . 5,278 0 0  
 Innes & Wood, Birmingham . . 5,266 11 1  
 Potter, Clapton . . . 4,790 0 0  
 Killingback, Camden Town . . 4,495 0 0

**HASTINGS.**

For Erection of Coal Store convertible into Retort House, for the Hastings and St. Leonards Gas and Coke Company. Messrs. S. & R. SMITH, Architects, 7 Havelock Road, Hastings. Quantities by the Architects.

Howell & Son . . . £5,080 0 0  
 Rodda . . . 5,050 0 0  
 Hughes . . . 5,026 0 0  
 Jenkins . . . 4,700 0 0  
 CRUTTENDEN (accepted) . . . 4,520 0 0

For the Erection of Steel Roof to same.

LINDSAY & Co., Paddington Iron-works (accepted) . . . £860 0 0

For Erection of a Revivifying Shed for the Hastings and St. Leonards Gas and Coke Company. Messrs. S. & A. SMITH, Architects, 7 Havelock Road, Hastings. Quantities by the Architects.

Howell & Son . . . £629 0 0  
 Rodda . . . 620 0 0  
 Hughes . . . 600 0 0  
 Jenkins . . . 550 0 0  
 CRUTTENDEN (accepted) . . . 496 0 0

**GREAT YARMOUTH.**

For Detached House, Euston Road, Great Yarmouth, for Mr. Frank Arnold. Messrs. BOTTLE & OLLEY, Architects, Great Yarmouth.

Contract No. 1.—Excavator, Bricklayer, Tiler, Mason, and Plasterer.

Leggett . . . £870 0 0  
 Cork & Beech . . . 849 0 0  
 T. Howes . . . 849 0 0  
 E. Howes (accepted) . . . 825 0 0

Contract No. 2.—Carpenter, Joiner, Ironmonger, Plumber, Glazier, and Painter.

Davy . . . £560 0 0  
 Cooper . . . 547 0 0  
 Springall . . . 491 0 0  
 RAND & COOPER (accepted) . . 480 0 0

**HOWDEN.**

For Drainage Works, Howden.

SMITH & SON, Newcastle-on-Tyne (accepted) . . . £2,616 0 0

**IRVINE.**

For Cutting Eight Miles of Tracks, and Laying and Jointing Cast-iron Pipes, for the Stevenson and Saltcoats Waterworks Extension. Messrs. J. & A. LESLIE & REID, Edinburgh, Engineers. Quantities by Mr. R. Little.

Smith, Newcastle-on-Tyne . £1,446 9 0  
 Howatson, Lugton-by-Beith . 1,436 18 4  
 Shanks, Motherwell . . . 1,265 0 0  
 Pollock, Partick . . . 1,255 1 3  
 Stewart, Camphill-by-Dalry . 1,251 13 5  
 Duncan, Glasgow . . . 1,200 17 9  
 Brown & Young, Glasgow . . 1,075 0 0  
 Bolton, Glasgow . . . 1,058 19 3  
 Urquhart, Glasgow . . . 980 8 8  
 M'Donald & Son, Hawick . . . 874 3 10  
 J. & W. Osborne, Ayr . . . 872 18 11  
 Black & Eadie, Johnstone . . 850 7 2  
 Worth & Strachan, East Wemyss 839 17 8  
 Nimmo & Coupar, Peebles . . 745 16 7

Messrs. Laidlaw & Sons, Glasgow, are to supply the pipes, and the Glenfield Company, Kilmarnock, the valves.

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.

# VENTILATION

# WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, Esq., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the Illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning on one gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



**ILKESTON.**

For Brickwork in connection with new Retort-house and building Retort Beds, Fitting Shop, Chimney Shaft, &c., at Gasworks. Mr. F. C. HUMPHREYS, Engineer, Ilkeston.

|                 |        |   |   |
|-----------------|--------|---|---|
| Manners         | £1,115 | 0 | 0 |
| Haynes          | 1,093  | 0 | 0 |
| SHAW (accepted) | 995    | 0 | 0 |

**INNISHOWEN.**

For Construction of Reservoir at Buncrana, for the Guardians of Innishowen Union. Mr. C. E. STEWART, C.E., Pump Street, Londonderry.

|                                       |        |   |   |
|---------------------------------------|--------|---|---|
| Kelly, Moville                        | £1,769 | 0 | 0 |
| O'Driscoll, Glyn                      | 1,707  | 0 | 0 |
| COLHOUN BROS., Londonderry (accepted) | 1,643  | 0 | 0 |

**JEDBURGH.**

For Removal of old Gasholder, and Replacing new one of Similar Dimensions, for the Jedburgh Gas Company.

|  |      |    |   |
|--|------|----|---|
| Donald & Wilson, Paisley               | £130 | 0  | 0 |
| Veitch, Jedburgh                       | 127  | 17 | 6 |
| Black, Boiler Works, Tweedmouth        | 125  | 0  | 0 |
| Balfour & Co., Leven                   | 125  | 0  | 0 |
| Brodie & Co., Paisley                  | 119  | 10 | 0 |
| ARDREE IRON COMPANY, Ardree (accepted) | 119  | 0  | 0 |

**Own Design.**

|   |     |   |   |
|---|-----|---|---|
| Ashmore, Benson & Pease, Stockton-on-Tees | 160 | 0 | 0 |
| Balfour & Co., Leven                      | 107 | 0 | 0 |
| Holmes & Co., Huddersfield                | 105 | 0 | 0 |

**KINGSWEAR.**

For Building Retaining Wall and Landing Steps against the River Dart, adjoining the Royal Dart Yacht Club, Kingswear. Messrs. BEST & COMMINS, Architects, Exeter.

|  |      |    |   |
|--|------|----|---|
| Thomas & Son, Dartmouth                | £480 | 0  | 0 |
| J. E. & J. SHORT, Kingswear (accepted) | 325  | 10 | 0 |
| Hawkins, Dawlish                       | 260  | 0  | 0 |

**KETTERING.**

For Street Improvement Works, Kettering. Mr. J. ALFRED GOTCH, Surveyor.

|                                |        |    |   |
|--------------------------------|--------|----|---|
| White, Northampton             | £1,380 | 0  | 0 |
| Finneagan, Northampton         | 1,209  | 2  | 6 |
| C. & F. Henson, Kettering      | 1,120  | 0  | 0 |
| Payne, Kettering               | 1,098  | 10 | 0 |
| Margetts & Neal, Kettering     | 1,050  | 10 | 0 |
| Henson, Kettering              | 1,038  | 0  | 0 |
| F. Barlow, Rothwell            | 1,032  | 17 | 6 |
| E. BARLOW, Rothwell (accepted) | 980    | 0  | 0 |

**LONDON.**

For Erection of Thirteen Shops and for Repairs to Thirteen Houses and other incidental Works in the Kentish Town Road, N.W., for Messrs. H. H. Bridgman and H. Newson Smith. Quantities supplied by Mr. F. Thomson.

**Thirteen Shops.**

|               |        |   |   |
|---------------|--------|---|---|
| Killingback   | £4,050 | 0 | 0 |
| Manley        | 3,887  | 0 | 0 |
| Brass & Son   | 3,763  | 0 | 0 |
| Nightingale   | 3,741  | 0 | 0 |
| Scrivener     | 3,688  | 0 | 0 |
| Wall Bros.    | 3,630  | 0 | 0 |
| Dixon         | 3,600  | 0 | 0 |
| Gould & Brand | 3,598  | 0 | 0 |
| Toms          | 3,502  | 0 | 0 |
| LAMBLE *      | 3,394  | 0 | 0 |

**Repairs.**

|               |       |   |   |
|---------------|-------|---|---|
| Brass & Son   | 3,125 | 0 | 0 |
| Nightingale   | 3,098 | 0 | 0 |
| Wall Bros.    | 3,029 | 0 | 0 |
| Gould & Brand | 2,989 | 0 | 0 |
| Scrivener     | 2,918 | 0 | 0 |
| Toms          | 2,914 | 0 | 0 |
| Killingback   | 2,632 | 0 | 0 |
| Dixon         | 2,390 | 0 | 0 |
| Manley        | 2,167 | 0 | 0 |
| Lamble        | 1,963 | 0 | 0 |

\* Accepted subject to modification.

For Alterations, South Hampstead Branch, London and South-Western Bank, Limited. Mr. C. BELL, Architect. Quantities by Mr. Henry Lovegrove, 26 Budge Row, E.C.

|                       |      |   |   |
|-----------------------|------|---|---|
| STEPHENSON (accepted) | £649 | 0 | 0 |
|-----------------------|------|---|---|

**LONDON—continued.**

For Erection of Girls' Home, Bloomsbury. Messrs. BORER & DOBB, Architects. Quantities by Mr. Henry Lovegrove, 26 Budge Row, E.C.

|                  |        |   |   |
|------------------|--------|---|---|
| Ashby & Horner   | £8,928 | 0 | 0 |
| Scrivener & Co.  | 8,865  | 0 | 0 |
| Holland & Hannen | 8,760  | 0 | 0 |
| Dove Bros.       | 8,315  | 0 | 0 |
| Woodward         | 8,200  | 0 | 0 |
| Brass & Son      | 7,777  | 0 | 0 |

For Alterations and Additions to the Pavilion, Greenwich Park, for Messrs. Gatti & Conceprio. Mr. HENRY ROBERTS, Architect and Surveyor, 113 Lewisham Road, S.E.

|                |      |    |   |
|----------------|------|----|---|
| Meager         | £337 | 12 | 0 |
| Holloway       | 290  | 0  | 0 |
| Cracknell      | 265  | 0  | 0 |
| Hubble & Trott | 260  | 0  | 0 |
| SLY (accepted) | 225  | 0  | 0 |

For Works at Working Lads' Institute, Whitechapel, London, E. Mr. GEORGE BAINES, Architect, 4 Great Winchester Street, E.C.

**Heating Apparatus.**

|   |      |    |   |
|---|------|----|---|
| Gardners, London                          | £162 | 0  | 0 |
| Strode & Co., London                      | 126  | 0  | 0 |
| Bacon & Co., London                       | 75   | 0  | 0 |
| Jeffreys, London                          | 70   | 0  | 0 |
| Cannon, London                            | 69   | 10 | 0 |
| JOHN KING (Limited), Liverpool (accepted) | 50   | 0  | 0 |

**Gas Fittings.**

|   |     |    |   |
|---|-----|----|---|
| Winfield & Co., London                  | 144 | 12 | 2 |
| Brawn & Co., Birmingham                 | 120 | 4  | 9 |
| Strode & Co., London                    | 114 | 9  | 0 |
| Vaughan & Brown, London                 | 105 | 16 | 5 |
| Gardners, London                        | 83  | 10 | 6 |
| Cannon, London                          | 68  | 12 | 0 |
| KEELING, TEALE & Co., London (accepted) | 68  | 9  | 0 |

For Alterations, Clapton Branch, London and South-Western Bank, Limited. Mr. C. BELL, Architect. Quantities by Mr. Henry Lovegrove, 26 Budge Row, E.C.

|                    |      |   |   |
|--------------------|------|---|---|
| STEWART (accepted) | £650 | 0 | 0 |
|--------------------|------|---|---|

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"November 11, 1881.

(Signed) WALTER REID."

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**LONDON—continued.**

For Building Police Station, Wandsworth Common.

ANSELL, Lambeth (accepted) . £3,065 0 0

For Paving Work in the Parish of St. Luke's.

|                      |        |          |
|----------------------|--------|----------|
| Aspinall & Son . . . | £2,005 | 4s. 2d.  |
| Mowlem & Co. . . .   | 1,809  | 3s. 6d.  |
| RUTTY (accepted) . . | 1,765  | 3s. 6d.  |
| Wheeler & Hindle . . | 1,735  | 3s. 10d. |

For Works of Painting and Cleaning at the Infirmary of the Union, St. John's Hill, New Wandsworth.

|                                    |      |      |
|------------------------------------|------|------|
| Castle, Borough . . .              | £345 | 0 0  |
| Heath, St. John's Hill .           | 317  | 10 0 |
| Brown, Shepherd's Bush .           | 298  | 0 0  |
| Turtle & Appleton, St. John's Hill | 283  | 0 0  |
| Ellis, Lavender Hill . .           | 283  | 0 0  |
| Hancock, Battersea . .             | 275  | 12 0 |
| Hammond, Battersea . .             | 268  | 10 0 |
| Stewart & Co., Walworth .          | 264  | 15 0 |
| Derby, London . . . .              | 237  | 0 0  |
| LEMMON, Ascot (accepted) .         | 231  | 0 0  |

For Building Boundary Wall and Additions to other Walls at the Workhouse School, Hornsey Road, Islington. Mr. WILLIAM SMITH, Architect, 1 Gresham Buildings, E.C.

|  |      |      |
|--|------|------|
| Turner, Remington Street . .                   | £213 | 0 0  |
| Macdonald, Marchmont Street .                  | 209  | 10 0 |
| Halse & Brooker, Hunton Bridge                 | 181  | 7 6  |
| Ward & Lamble, Hornsey Street                  | 175  | 0 0  |
| Chant, Brewery Road . . . .                    | 170  | 0 0  |
| Wood, Harris & Co., Clapham .                  | 170  | 0 0  |
| Dunford & Langham, Eden Grove                  | 168  | 0 0  |
| Hale & Son, Paddington . . .                   | 164  | 0 0  |
| Holding, West Green . . . .                    | 160  | 13 0 |
| Brown, Martineau Road . . .                    | 160  | 0 0  |
| King, Hampstead . . . . .                      | 158  | 10 0 |
| Daily & Ames, Great Western Road, S.W. . . . . | 155  | 0 0  |
| Larke & Son, City . . . . .                    | 153  | 0 0  |
| Ebbage, St. John Street Road .                 | 152  | 10 0 |
| Stevens Bros., Seven Sisters Road . . . . .    | 141  | 0 0  |
| KILLINGBACK, Camden Town (accepted) . . . . .  | 115  | 0 0  |

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**LONDON—continued.**

For Sewer Work between Greenfield Street and Plumber's Row, Commercial Road, Mile End Old Town. Mr. J. M. KNIGHT, Surveyor, Vestry Hall.

|                               |      |      |
|-------------------------------|------|------|
| Botterill, Cannon Street . .  | £464 | 0 0  |
| Butler, Camberwell Road . .   | 450  | 0 0  |
| Nicholls, Wood Green . . .    | 229  | 0 0  |
| FINCH, Stepney (accepted) . . | 205  | 12 6 |

**LUTTON.**

For Erection of Club-house and Buildings attached at Cornwood, and Schoolmistress's Cottage at Lutton.

**Club-house, &c., Cornwood.**

|                               |        |     |
|-------------------------------|--------|-----|
| Shellabear, Mutley . . . .    | £1,140 | 0 0 |
| Laphorn & Goad, Plymouth .    | 1,050  | 0 0 |
| Dart, Devonport . . . . .     | 988    | 0 0 |
| Crocker, Modbury . . . . .    | 957    | 0 0 |
| Roberts & Hurrell, Plymouth . | 809    | 0 0 |
| PEARSE, Modbury (accepted) .  | 800    | 0 0 |

**Cottage, Lutton.**

|                               |      |      |
|-------------------------------|------|------|
| Dart, Devonport . . . . .     | £267 | 0 0  |
| Roberts, Cornwood . . . . .   | 265  | 0 0  |
| Roberts & Harrell, Plymouth . | 250  | 0 0  |
| Stevenson, Ridgway . . . . .  | 250  | 0 0  |
| Sincock & Blight, Ivybridge . | 228  | 16 0 |
| Crocker, Modbury . . . . .    | 200  | 0 0  |
| PEARSE, Modbury (accepted) .  | 200  | 0 0  |
| Laphorn & Goad, Plymouth .    | 195  | 0 0  |

**LYDD.**

For Erection of new Wesleyan Chapel at Lydd. Mr. CHARLES BELL, Architect. Quantities by Mr. H. Lovegrove, 26 Budge Row, E.C. Clements & Son, Folkestone . £1,290 0 0

**MARYBOROUGH.**

For Additions and Alterations to Town Hall, Maryborough. Mr. HAMPDEN SHAW, Architect, 5 Westmoreland Street, Dublin. Quantities by Mr. Shaw.

|                       |      |      |
|-----------------------|------|------|
| Pile . . . . .        | £930 | 0 0  |
| Wynne . . . . .       | 805  | 0 0  |
| Dunne . . . . .       | 799  | 15 0 |
| Knowles . . . . .     | 750  | 0 0  |
| Farquharson . . . . . | 670  | 0 0  |
| Crampton . . . . .    | 610  | 0 0  |

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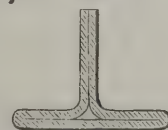
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**MALDON.**

For Alterations and Repairs to the Thatcher's Arms, Tolleshunt d'Arcy, near Maldon, for Messrs. T. Daniell & Sons, West Bergholt. Mr. J. W. START, Architect, Colchester.

|                                |      |      |
|--------------------------------|------|------|
| Law, Layer Breton (accepted) . | £117 | 10 6 |
| Rudrum, Tolleshunt d'Arcy . .  | 110  | 5 0  |

**NEWCASTLE-ON-TYNE.**

For Erection of Mercantile Chambers Extension, Quayside, Newcastle-on-Tyne, for Mr. Thomas Harper. Mr. J. C. PARSONS, Architect.

SCOTT (accepted) . . . . . £2,350 0 0

For Monument and Surroundings over Family Vault, Benwell Churchyard, Newcastle-on-Tyne, for the Executors of the late Mr. R. M. Davidson. Mr. J. C. PARSONS, Architect.

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| Berman & Firth, Dewsbury            | 276  | 9  | 6  |
| Holmes & Co., Huddersfield          | 245  | 0  | 0  |
| Walker, Dewsbury                    | 243  | 0  | 0  |
| S. & S. Clark, Batley               | 243  | 0  | 0  |
| Newton, Chambers & Co., Sheffield   | 238  | 0  | 0  |
| Teall, Wakefield                    | 233  | 3  | 4  |
| Bagshaw & Sons, Batley              | 212  | 0  | 0  |
| Butler, Stanningley                 | 206  | 0  | 0  |
| Hird, Shipley                       | 188  | 0  | 0  |
| Lister, Heckmondwike                | 170  | 12 | 6  |
| Bradley & Co., Wakefield (accepted) | 161  | 12 | 9  |

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For Taking Down the Older Part of Buildings and Rebuilding same in the Rear of No. 1 Friar Street, Reading, for Mr. W. F. Blandy. Mr. FRED. W. ALBURY, F.R.I.B.A., Architect.

|                   |        |   |   |
|-------------------|--------|---|---|
| Woodroffe         | £3,087 | 0 | 0 |
| Wernham           | 2,543  | 0 | 0 |
| Higgs & Sons      | 2,520  | 0 | 0 |
| Bottrill          | 2,490  | 0 | 0 |
| Kingerlee         | 2,295  | 0 | 0 |
| SEARLE (accepted) | 2,280  | 0 | 0 |

For Erection of Three Shops and Premises on the West Side of Blagrove Street, Reading, for Mr. J. H. Blagrove. Mr. FRED. W. ALBURY, F.R.I.B.A., Architect.

|                    |        |    |   |
|--------------------|--------|----|---|
| Denton             | £3,139 | 19 | 0 |
| Kingerlee          | 3,095  | 0  | 0 |
| Searle             | 3,051  | 0  | 0 |
| Higgs & Sons       | 2,999  | 0  | 0 |
| Woodroffe          | 2,998  | 0  | 0 |
| Bottrill           | 2,970  | 0  | 0 |
| WERNHAM (accepted) | 2,813  | 0  | 0 |

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For Supply of 3-inch Cast-iron Syphon Pipe, Tank, Valves, and Pumping Gas at Hangleton, for the Shoreham Water Company. Mr. ELLICE CLARK, M.Inst.C.E., Engineer.

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| Hibbs, Brighton                 | 433  | 0 | 0 |
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| GUY & SON (accepted) | 1,494  | 0  | 0 |

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For Supply of 60 Cast-iron Hinged Gully Grids, each 2 cwt., for the Corporation of Southport. Mr. W. CRABTREE, Borough Surveyor.

|                                       |     |    |   |
|---------------------------------------|-----|----|---|
| Hardy & Padmore, Worcester            | £56 | 0  | 0 |
| The Tee Side Iron Co., Middlesbrough  | 45  | 0  | 0 |
| Executors of D. Clark, Carlisle       | 41  | 5  | 0 |
| Holmes & Co., Huddersfield            | 37  | 10 | 0 |
| Stanton Ironworks Co., Nottingham     | 33  | 15 | 0 |
| Pendleton & Co., Liverpool            | 33  | 0  | 0 |
| Pearson, Knowles & Co., Warrington    | 30  | 0  | 0 |
| Fletcher & Sons, Salford              | 30  | 0  | 0 |
| Evans & Brownell, Cannock             | 30  | 0  | 0 |
| Brook & Co., St. Helens               | 29  | 0  | 0 |
| The Douglas Forge, Wigan              | 27  | 0  | 0 |
| Jukes, Coulson, Stokes & Co., London  | 24  | 15 | 0 |
| R. & J. Rankin, Liverpool             | 24  | 15 | 0 |
| Hodge, Southport                      | 23  | 0  | 0 |
| Ball, Ormskirk                        | 23  | 0  | 0 |
| McCrossan, Liverpool                  | 22  | 15 | 0 |
| HORROCKS & OWEN, Tyldesley (accepted) | 22  | 5  | 0 |

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|----------------------|------|----|---|
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| Webb, Silverdale     | 700  | 0  | 0 |
| Downing, Silverdale  | 648  | 13 | 0 |

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For Painting and Decorating the Assembly-room, and other Rooms, at the Oddfellows' Hall, Albert Square, Stalybridge. Mr. GREGORY GILL, Architect, Gilmoor, Stalybridge.

|   |      |    |   |
|---|------|----|---|
| Goodall & Co., Manchester                 | £185 | 0  | 0 |
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| Bennett, Manchester                       | 128  | 0  | 0 |
| Hobbs, Stalybridge                        | 93   | 0  | 0 |
| Greenhalgh & Shortland, Ashton-under-Lyne | 89   | 10 | 0 |
| MELLOR, Ashton-under-Lyne (accepted)      | 83   | 0  | 0 |

**STOURBRIDGE.**

For Making Streets in Dennis Park, Amblecote. Mr. W. FIDDIAN, Surveyor, Stourbridge.

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| Griffiths, Wednesbury           | £2,469 | 17 | 4  |
| Jones & Fitzmaurice, Birmingham | 2,238  | 10 | 0  |
| Horton, Brierley Hill           | 2,220  | 0  | 0  |
| Frayne, Stourport               | 2,113  | 12 | 0  |
| Hughes & Co., Cannock           | 2,097  | 18 | 6  |
| Law, Sutton Coldfield           | 2,085  | 0  | 0  |
| Dorse & Son, Cradley Heath      | 1,975  | 2  | 2  |
| Currall & Lewis, Birmingham     | 1,952  | 5  | 0  |
| Innes & Wood, Birmingham        | 1,901  | 18 | 10 |
| Vale, Hartlebury                | 1,748  | 10 | 0  |
| GUEST, Stourbridge (accepted)   | 1,615  | 18 | 0  |

**SURBITON.**

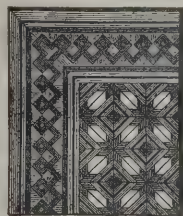
For Building Villa at Surbiton-on-Thames for Mr. R. A. Morris, J.P. Mr. J. BUCKLEY WILSON, A.R.I.B.A., 15 Castle Street, Swansea, and Mr. J. E. L. JAMES, 27 Chancery Lane, London, Architects.

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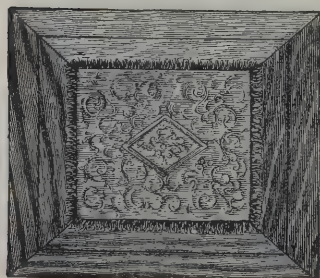
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| Luscombe & Son, Exeter             | 5,505 10 0   |
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For Erection of Pair of Houses, Brunswick Road, for the Sutton Land and Houses Company (Limited). Mr. HERBERT D. APPLETON, A.R.I.B.A., Architect, 157 Wool Exchange, E.C.

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|--------------------|------------|
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| Humphris           | 1,345 0 0  |
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| Harris             | 1,038 0 0  |
| BURBAGE (accepted) | 989 0 0    |

For Alterations to Post Office, Sutton, for Mr. W. R. Church. Mr. HERBERT D. APPLETON, A.R.I.B.A., Architect, 157 Wool Exchange, E.C.

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| UNDERWOOD (accepted) | £1,802 10 0 |
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For Alterations and Additions to The Cottage, Calcot Park, Tilehurst, for Mr. J. H. Blagrove. Mr. FRED. W. ALBURY, F.R.I.B.A., Architect.

|                    |           |
|--------------------|-----------|
| WERNHAM (accepted) | £222 18 0 |
|--------------------|-----------|

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For Erection of a Cleft Oak Fence, Broad Lane. Mr. W. A. H. DE PAPE, Surveyor, Tottenham.

|                                      |          |
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| Edwards, Brangling                   | £320 0 0 |
| Taylor & Brooking, Dorking           | 265 0 0  |
| Humphreys & Son, Tottenham           | 265 0 0  |
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| Wilson & Co., Tottenham              | 226 16 0 |
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For Laying Sewers, Westfield, Workington. Mr. W. L. EAGLESFIELD, Surveyor.

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| Smith, Maryport                 | 564 3 3   |
| Taylor, Workington              | 461 15 0  |
| JOHNSTON, Harrington (accepted) | 450 17 3  |

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For Additions to Club-house, for the Worthing Amateur Rowing Club. Mr. E. C. PATCHING, Architect.

|                      |          |
|----------------------|----------|
| R. C. Blaker         | £228 0 0 |
| Snewin & Son         | 225 0 0  |
| Crouch               | 190 0 0  |
| Cook                 | 188 10 0 |
| J. BLAKER (accepted) | 174 10 0 |

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| Bell, Tottenham                    | 1,229 0 0  |
| Innes & Wood, Birmingham           | 1,225 0 0  |
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For Enlargement of Infants' School, Wroughton.

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| Turvey, Wroughton            | 474 5 0   |
| WILLIAMS, Swindon (accepted) | 292 0 0   |

LAYING DRAIN-PIPES UNDER ROADS.

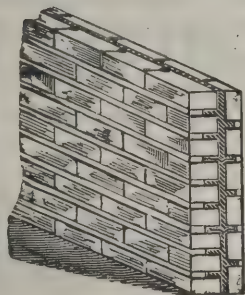
AN action which was tried last week in the Queen's Bench Division, before Mr. Justice Smith, indicates contractors' risks when carrying out works beneath roads. The defendant, Mr. Everitt, had taken a contract for laying drains at Richmond, Surrey, and on the 6th of last July a two-horse waggonette belonging to the plaintiff was being driven over the road, when the ground collapsed and the horses were injured, one dying shortly afterwards. The action was taken to recover damages for the loss. After a coachman had given evidence, the following witnesses were called:—

Mr. J. E. Brodrick said he was acting as surveyor to the Richmond Vestry while the work was in progress. Defendant was making a drain along one side of the road, and cross drains from the gullies on the other side of the road. The drain into which the horses fell was a cross drain. Defendant's men drove a heading under the tramway, and made cross cuttings on either side, to a depth of from four to seven



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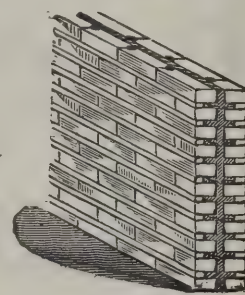
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To meet the rapidly-increasing demand, the Patentee has recently made extensive additions to his Machinery and Plant, which enables him to effect

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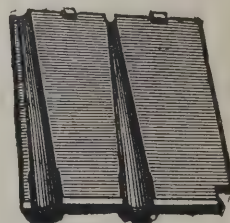
A wall built two half-bricks on the flat is much stronger than an 18-inch wall built in the ordinary way.



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feet. It was a sandy soil. Defendant filled up the cuttings by throwing the sand back again and ramming. They did that also in filling up the tunnel. That was not the proper way of doing the work. It should have been done by filling in in layers, and then pouring on water to consolidate the soil. During the course of the work he called the ganger's attention to the way in which it was done, and offered to lend him a water-cart. He replied that there had been thorough ramming, and that there was no necessity for water. It was not possible to ram sand without the use of water to prevent a subsidence. The ganger did not accept his offer of the water-cart, and witness told him he should hold him responsible for anything that might occur. On the afternoon of the accident he went down to see the place. He did not notice any water on the road at either side. The horses were still there. He saw the hole into which they had fallen. The ground in the cutting appeared to have sunk from two to three feet. After the hole had been filled in temporarily, he went and saw defendant's foreman, and told him what had happened. Defendant's men subsequently filled in the cuttings, several of which had sunk. At the time of the accident defendant was still carrying on the work. The thunderstorm referred to by the last witness lasted about an hour and a half.—Cross-examined witness said the road was never closed for traffic. The contractor had not cleared up everything at the time of the accident and completed the work. He was surveyor *pro tem.* at the time of the accident, and took his orders from the vestry clerk. He had previously been road foreman. Mr. Brunton was surveyor at the time the contract was entered into. Witness was not a member of the Institute of Civil Engineers.

Mr. J. M. Lucas, builder, of Richmond, said he had had considerable experience in the making of drains. He remembered the thunderstorm which took place on July 6. It was a very heavy storm, and an enormous quantity of rain fell. He went to the spot where the accident happened about twenty minutes after the occurrence. The ground seemed to be

honeycombed and soft, and he put a stick down 2 feet 6 inches without any great pressure. The ground in the locality was sand. A cutting of this kind should have been filled in in layers and in a dry season such as when this work was carried out lots of water should have been used. His experience went to show that it was impossible to effectively fill up cuttings of this kind without the employment of water. Judging from what he saw he should say that the cutting was not properly filled up, though he did not see the work done. If the cutting had been properly filled up, the accident probably would not have happened. He noticed that there had been a sinking in three places.—Cross-examined: He was a member of the Vestry at the time the contract with Mr. Everitt was entered into.—Mr. W. Beard, drainage contractor, of Twickenham, said he was acquainted with the locality where the accident happened. He had had great experience in the making of drains and the way of filling them up. He was of opinion that the work in question had not been properly carried out. He explained how it should have been performed, and said the sand should not have been put in dry. In many cases he had made arrangements with water companies to turn in tons of water for purposes of consolidation.

This being the plaintiff's case, Mr. Charles, Q.C., addressed the jury for the defence, and contended that the works were performed in a proper and efficient manner in accordance with the contract, and that there was no neglect of any sort on the part of Mr. Everitt. He further argued that if any one was to blame it was the Richmond Vestry, and he maintained that the accident was caused by the heavy rainfall, coupled with the insufficient outlet provided by the Richmond Vestry.

Mr. Charles Everitt said he entered into a contract with the Vestry to construct a drain from the river to the south end of Kew Road. He commenced the work upon the order of Mr. Brunton, the surveyor. He began to do the work from the river in March, and as soon as he got to Mr. Poupert's land he was refused permission to enter, and he had to start again at a

manhole at the bottom of Sandy Lane. He inspected the work while in progress and when completed, and considered it was efficiently done according to the contract. On June 12 he wrote a letter to the vestry clerk, stating that he should shortly have finished the drain in Kew Road. The work was absolutely finished on July 5. The part where the accident happened was finished before that time. He subsequently inspected the scene of the accident, and considered it happened by an extraordinary fall of rain and there not being a proper outfall. He had received a final certificate for the completion of the work, but had not received all the money. There were no complaints made to him as to the way in which the cuttings were filled in. When the contract was let the Richmond Vestry knew the character of the soil and should have made provision for it.—In cross-examination witness said he had been a contractor for nine years. He had had several contracts for drains before. He had a previous contract for a sand and gravelly soil. In the present case he faithfully carried out the provisions of his contract. The way the drain was filled up was not the proper way to fill up drains with sandy soil. The soil was peculiar, and water should have been used.—The Judge: That you knew?—Witness: Yes, my lord.—Cross-examination continued: When the ground was opened he observed that it was loamy sandy soil. It was questionable whether it was possible to fill in this trench so that it could not sink. But for the storm this portion of the road would not have sunk. The cause of the accident was the water lying on that portion of the road where it happened. He knew that the trench was safe but for an extraordinary rainfall.—Re-examined: Apart from storm, the trench was properly constructed. Parts of it had been driven over for three weeks before the accident.

Mr. George Constable, assistant at the Meteorological Observatory at Kew, said that the thunderstorm referred to was most unusually and extremely severe. With one exception the rainfall on that occasion was the heaviest since 1858.

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Mr. Herbert, clerk of the works at the time of the execution of the works by Messrs. Ford & Everitt, gave evidence as to the insufficiency of the outlet.—William Winslet, foreman of the works, said they were thoroughly done. After the pipes were laid they were filled up level to the tops, and then about a foot layer of earth was added, and so they continued ramming and filling. On the Saturday previous to the accident the works were just completed. He was called to the spot shortly after the accident, and saw traces of water on both sides of the road. The parish men filled in the trench after the accident. All the trenches were filled in properly when he left them, and had been run over for some weeks. He accounted for the accident by reason of the severity of the storm.—John Smith, tramway inspector, gave evidence as to the flooding of the Kew Road on the day in question.—Cross-examined, witness said he did not recollect having told Mr. Lucas that he considered the work was disgracefully done, and that he wondered there had not been more accidents.

The Judge having summed up, the jury, without leaving the box, found that the injury was occasioned by the neglect of the defendant, and by reason of his not *bonâ fide* carrying out his contract. A verdict was therefore entered for the plaintiff—damages 90l.

### BRICKFIELDS AS NUISANCES.

TWO actions were tried together lately before Mr. Justice Cave, in which the owners and tenants of property at Streatham sought to restrain Messrs. Neal, brickmakers, from burning bricks in such a way as to interfere with their enjoyment of their property. At one time soft core was burnt, but for more than a year it was buried instead. The defendants therefore denied that anything more was going on upon their premises than the ordinary process of brickmaking, but it was contended for the plaintiffs that both the "breeze" and the fine refuse, combined with road-scrappings, would

inevitably contain organic matter, and that noxious fumes, of a different character from those of mere burning clay, did, as a fact, come from the burning clamps of brick. A great mass of evidence was adduced on either side as to the nature and extent of the alleged nuisance. Among other witnesses for the defence were two sanitary inspectors and three members of the Wandsworth Board of Works, as well as the medical officer for Streatham, who said that they had found no offensive smell on the defendants' premises. The quantity of bricks made by the defendants was in 1883 1,800,000, and in 1884 2,100,000. In 1884 the materials used were, according to the defendants' evidence, 500 yards of refuse, 400 to 500 yards of road-scrappings, and 5,000 yards of clay.

Mr. Justice Cave delivered judgment in favour of the plaintiffs. His lordship said the plaintiffs had to make out that there was a nuisance, and a nuisance which not merely affected this, that, or the other individual, but one which substantially affected the plaintiffs themselves in health and in the comfort and enjoyment of their premises. The first nuisance alleged arose from the heap of house refuse. He (the learned judge) had no doubt that that heap gave off vapours and smells which constituted a nuisance, but he did not find evidence to satisfy him that that nuisance affected the plaintiffs. So there was undoubtedly a nuisance from the burning of "soft core;" but having regard to the time of year at which the core was burnt, and that at which the nuisance was perceived, there was no evidence that this nuisance affected the plaintiffs. On the contrary, his lordship was satisfied that it did not. Then came the third point. It was said that a nuisance arose from the burning brick, and this was the chief point. There had been a discussion as to whether there was a nuisance to health from this cause as well as a nuisance to enjoyment. The evidence satisfied him (the learned judge) that, so far as the brick-burning went there was no nuisance to health in the sense of causing disease or illness. There remained the question whether there was a nuisance which affected the plaintiffs in the

comfort and enjoyment of their premises; but he should first inquire whether there was a nuisance which affected anybody. Reviewing the general evidence which had been given on this subject, his lordship said that, in face of the medical evidence given for the plaintiffs, he could not believe that the use of animal refuse in brickmaking did not create a nuisance to the neighbourhood, and the officers of the district Board of Health who had been called as witnesses impressed him very unfavourably by the way they gave their evidence. The nuisance arising from the burning of "soft core" had been going on for four years, and so had the nuisance arising from the heap of house refuse; yet the local inspectors had found out nothing about it. This consideration materially affected the credibility of their evidence, especially when he (the learned Judge) remembered that Bartholomew and Finister (two of those witnesses, the latter the inspector of nuisances) gave their evidence with a strong bias in favour of the defendants. On the whole, the evidence for the plaintiffs very much preponderated, and his lordship was clearly of opinion that there was a nuisance at the brickfield. Did this nuisance affect Mr. Dunston and Mr. Seely? After reviewing the evidence as to the distance to which the smell travelled, and as to what had been perceived at Mr. Seely's house, his lordship said he was satisfied that there was a nuisance which could be perceived at the plaintiffs' premises, and to such an extent as to render the occupation of their houses uncomfortable and unenjoyable. The learned judge then went into that portion of the case relating to the destruction of Mr. Dunston's crops, with the result that he found the evidence not sufficient to establish that the nuisance had caused any injury to vegetation. His lordship therefore directed judgment for the plaintiffs on the first part of the case, with an injunction to restrain the burning of bricks in such a way as to interfere with the comfort of the plaintiffs. With regard to the injury to the crops, his judgment was in favour of the defendants, and the plaintiffs must pay the costs under this head so far as they could be separated.

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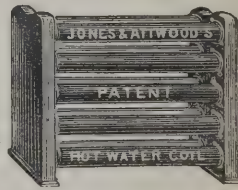
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Saturday, May 16, 1885.



# The Architect.

## THE WEEK.

WE lately announced the marriage of M. DE NEUVILLE in his sick room, and with much misgiving expressed a hope that, as the ceremony was a recognition of a long devotion, it might lead to his recovery. On Wednesday the artistic world of Paris was saddened by the death of the painter, and with reason, for ALPHONSE DE NEUVILLE was a type of the modern French artist. He had sacrificed much for art, for as the son of a wealthy merchant he might have aspired to a prosperous position in the State. He preferred art, and for many a year he endured the toilsome life which seems like a test of a man's sincerity. He worked hard and at low pay as an illustrator of books and periodicals. The valiant efforts which were made by a people who had been purposely disorganised by Imperialism inspired him with a desire to produce less fleeting works, and he painted on canvas scenes in the Invasion instead of drawing them on wood. But connoisseurs professed to see in his efforts nothing more than illustrations in colour; and if it were not for the amazing vigour of his battle-pieces, he must have been set down as a failure. His pictures were reproduced and made his name known through Europe. With his affectionate friend, M. DETAILLE, he painted the panorama of *Champigny*, which was unlike all preceding works of the class. The position he had attained was shown by the selection of M. DE NEUVILLE by a London firm to paint pictures of the recent English battles in Africa, and he entered into the work so loyally that his appointment was made a subject for congratulation.

MOST noteworthy among his masterpieces are *Dernières cartouches*, *Le combat sur les toits*, and *Attaque par le feu d'une maison barricadée*. The deceased painter was born at St. Omer in 1836 of good family. He entered the Naval College of L'Orient in preparation for joining the navy. It was while at this college that his extraordinary facility in using the pencil and his rapid progress in the study of perspective attracted the attention of the professors, and ultimately extorted from M. DUBOISSET the prophecy that the young pupil would end in becoming an artist. This made a great impression on DE NEUVILLE. He passed the examinations for the navy with success, but his family opposed his taking further steps towards entering the naval profession, as they wished him to study for the bar as a means of obtaining a Government appointment. DE NEUVILLE meanwhile bowed to circumstances, made his three years' legal studies in Paris, acquitted himself with great success, and returned to his home. Much of his time in Paris had been spent in the Champs de Mars and at the Ecole Militaire in studying the attitudes and habits of the soldiers and sketching military scenes, and his father finding it was useless to oppose any longer his artistic tendencies, sent him back to Paris, and at the age of eighteen he entered the *atelier* of M. PICOT, where he made the acquaintance of many of his future competitors in art. One of his pictures attracted the attention of EUGÈNE DELACROIX, and was the means of opening the doors of that select *atelier* to DE NEUVILLE.

WHEN there are two artists who have similar, or nearly similar, names, how is the identity of the individuals to be determined, and when there are honours how are they to be apportioned? In Paris, for example, there is a small street near the Batignolles containing several studios, which is dedicated to "ALFRED STEVENS." We have heard English art students refer to it as a testimony of the recognition by the Parisian authorities of the genius of the designer of the Wellington Monument, and they were very severe on the English indifference to the great artist. But the Belgians claim it for their ALFRED STEVENS. Who is to decide? In Belgium M. ALFRED STEVENS does not obtain all his honours, because other men have been given the same name by their sponsors. The Dutch Government lately sent him the cross of the Order of the Lion for the brilliant part

taken by M. STEVENS in supporting the Amsterdam Exhibition. But a clerk in the Belgian Chancellerie, to whom the honour was entrusted, took the first of the name in the directory, and sent the cross and diploma to another artist with a similar name. The latter thought he might keep within the law and yet gain advantage for himself by returning the jewel and retaining the diploma. The Belgian judges are, however, rather dull in comprehending delicate differences of this kind, and the painter has not only been deprived of his windfall, but has been fined and publicly reprimanded for the chancellor's blunder. It was wrong on his part to imagine that he co-operated in the Amsterdam Exhibition, but if he signed his pictures "A. STEVENS," and a purchaser was induced to imagine that he had obtained a work by the ALFRED STEVENS whose reputation is not confined to Belgium, the law can only approve of the transaction.

THE authorities at the Royal Academy are at present exercised by the discovery of signs of vandalism enacted within those august walls. It appears that cuts and scratches have been discovered on many of the pictures exhibited, and the pictures of Sir FREDERICK LEIGHTON have suffered conspicuously. The perpetrator of the mischief does not appear to have done any irreparable damage, as the scratches seem as a rule to be confined to unimportant parts of the pictures. One of the most serious instances, it is said, is that of Mr. ORCHARDSON'S portrait of *Mrs. Ralli*, a picture hung in Gallery No. 1, within a few feet of the attendants stationed at the turnstiles at the top of the grand staircase. The damage sustained consists of scratches, one being an irregular curved indentation, deeply and boldly made, on the lower fold of the gown, and measuring at least four inches. Another scratch, about two inches long, was across the gown at a higher point, and others less important appear here and there.

It is to be hoped that the architectural profession, which, according to some people, is accountable for the misdoings of unprofessional blunderers and many of the evils suffered by humanity, will not be accused of causing the illness of VICTOR HUGO, for a correspondent informs us that the illness of VICTOR HUGO is greatly due to the prolonged cold of the season, to which he exposed himself in consultations with the architect on the site of the residence that he is building. His present house is humid, and the sitting-rooms are not well ventilated.

AN important project will shortly be brought under the consideration of the Municipal Council of Paris, being nothing less than the creation of a monumental necropolis on the largest scale. It has been examined by several of the most influential members, and has secured their approval. The Architectural Commission of the Council, over which M. HATTAT presides, has reported favourably on the scheme. The advantage of it at the present is, that if approved it will give an opportunity for works on a grand scale, and in the existing state of the labour market that would count for much. The necropolis would also increase the means so dear to a Frenchman's heart of rendering names immortal.

RAILWAY construction in the United States is considerably affected by the state of the trade of the country, and when business is most flourishing the laying down of lines proceeds at an increased rate. The total length of new railway constructed in the United States this twelvemonth is stated to be 308 miles, against 595 miles at the corresponding date last year, 1,071 miles in 1883, 2,283 miles in 1882, 906 miles in 1881, 1,096 miles in 1880, 391 miles in 1879, 267 miles in 1878, 269 miles in 1877, 432 miles in 1876, 220 miles in 1875, 375 miles in 1874, 654 miles in 1873, and 1,070 miles in 1872. The figures represent main lines only, and not second lines or sidings. The rate of construction is apparently now about the same as immediately before the burst of railway speculation which accompanied the revival of trade in 1879, though it is still larger than during the most depressed period after the crisis of 1873.



## THE STUDY OF NATURE IN ARCHITECTURAL DECORATION.

IN art, as in everything else, as the Preacher says, "wisdom is profitable to direct." The indiscriminate use of good material may be as fatal as the adoption of bad material. Good principles applied without judgment may be equally disastrous with bad ones. Selection, fitness, a just discernment of the end through the means must be always kept clearly in view. That is to say, art in its highest and noblest form requires, above all, that unity of purpose be maintained, that a large grasp be taken of its ulterior aim and complete realisation as an organised totality, not admitting of anything to be taken away from it or added to it without injury. This is an absolute rule, not in one, but in all of the arts. Largeness, breadth, keeping are essential principles, and included in the term. Detail must always be made subservient to breadth, to the constructive idea, and must enhance as well as enrich the work in its whole dimensions. Over the latter it must never be allowed to prevail for a single instant. Every leaf, every touch of ornamentation should have reference to the completed work, or, in other words, they must take the scale of the structure, so to speak, and become a part of it. The mind must never be allowed to fix itself on any part which is not connected with the whole, which does not directly or indirectly lead it from the particular to the general, just as a magnificent fragment of a Greek moulding might bring before the intelligent observer the whole structure of which it formed a part. It would be an old and trite story to dwell on relationship and fitness in art in the general sense of the terms; yet there is a sense of these terms on which it may well be worth dwelling for a few moments in another aspect, namely, how far the study of nature is to be carried in the production of those forms which are intended to be auxiliary, and are not intended to appeal to us from their intrinsic individuality. Although the laws or rules that govern in this matter are much lost sight of, our task in their exposition is not a difficult one. Much will be conceded that commonly is only imperfectly followed. The appropriation of the principles to be expounded in art and practice, however, may be more difficult in their requirements of self-denial and disinterestedness. Let us examine the question a little more particularly.

In the construction of a work of art it is not only necessary that detail should occupy its proper relative position, but also that the detail in itself should be studied and worked with special reference to the purpose which it is intended to serve. A piece of absolute realism, however interesting and valuable in itself, might become injurious as an accessory of a larger composition if it distracted the attention and detained observation too long from the entire design, and did not rather lead one to expect and look for something more than itself. It will be seen from this point of view that a close realism would be lost, even mischievous: a literal following of Nature to its utmost detail, disturbing and confusing to the wider perception. Here the directing "wisdom" must come in. A different mode of study is required from that of mere reproduction of form. A higher rule must prevail: that of organisation. Attention must be directed to the broader significance of law and growth, and for the purpose of reaching this it is proposed here to offer a few suggestions.

The higher significance of form depends not so much on the imitation of its material aspect as in penetrating the law of its growth or development, and striving to embody that rather than the substance which clothes it. It will always be a question in art in general how far the real must prevail in its relationship to the ideal. But in the particular art now under consideration, that of architecture, the question becomes much simplified. Architecture is not an imitative art in the sense in which painting and sculpture are so. It follows no law of growth or construction, but that of the mind or intellect, of which it is the outgrowth. It does not go for its forms to those of Nature, but they are supposed to arise from the interior sense, creative at second hand, as it were, by the perception of those organic laws which work in the forces of Nature by which it is surrounded. Thus Nature herself becomes reflected and transfused through the mind of the architect. We have thus primarily

a different principle upon which to work from that which prevails in the imitative arts. Let us at once define and accept it.

This principle implies a study of the modes and conditions of Nature's manifestation of form, rather than the rigid observation and reproduction of her minute detail. The architect must direct his attention to quite other attributes of the forms which he sees around him than those of which the painter makes selection. The one observes form, it is true; but his attention must be at least equally directed to colour. This the architect need not regard in his professional capacity. Form he must observe closely, but chiefly in its larger, broader, and more solid aspects. Light and shade he must look to as well, for these are no less important to him than to the painter. A shadow to him is often as useful as the structure which causes it. But, above all, he must look to the movement, the character, the individuality of the object which he studies. These are the most valuable qualities to him. If he has these accurately and clearly defined to his perception they are all he wants or can make use of. These qualities once understood and received into the mind, he will have no need formally to conventionalise what he has observed. It will resolve itself into the most fitting condition for adaptation to his purposes. The architect must be a close observer of Nature, but he must endeavour to eliminate from its forms what he does not want, only retaining those characteristics which are likely to be of service to him.

Beyond and above geometric forms of ornament solely depending on the more or less regular distribution and arrangement of inorganic shapes and lines—that is, those which contain no suggestions of growth and vitality in themselves—may be ranked those the elements of which are gleaned from the manifestations of life which are around us, and which, becoming digested or transfused, as it were, in the mind, are made the means of expressing individual character, and are adapted to a definite purpose or object in carrying out a structural art idea. Of these forms the vegetable may be taken for first consideration.

As to the selection of plant-growths which are best adapted to be reproduced—or, let us rather say, recreated—in solid material by means of the chisel, those of broad distinctive features should be chosen—those of the fewest lines and most characteristic ones, whose law of growth is not rigid and uncompromising, as is the case with most of the ferns, for example. Forms of many lines, sharply dentated, or of small partial proportions, should for the most part be rejected as unsuited for simulation in solid material. The large, simple, and broad are more suitable to this purpose. Having selected the form, it must be studied first in the direction or movement which the branches, stalks, leaves, or flowers take in their growth. Every tree, shrub, or succulent plant has a certain habit or mode of growth distinct from every other, generally in proportion as it differs in kind or relationship. Each tree has its characteristic angle of ramification, each bough of each tree its peculiar bend or sweep or sturdy uprightness of growth unlike every other. Still more variety in these respects mark those plants which are, on the whole, better applicable to sculptural treatment than the arborescent. This outward and general character, therefore, should be the first to be carefully and accurately studied: what kind of curves, distribution of parts, direction and mode of growth constitute the special type—the *intention*, so to speak—of the object under study. These characteristics should be compared with those of other types and kinds, and the differences noted, in order to give force to the pronouncement of what is distinctive and special. From these the student should pass to the consideration of the lines and features of the individual parts. He should regard the modelling of the stalks, leaves, and petals, leaving out those qualities which he does not require as not adapted to his purpose, as, for example, all accidental markings, hairs, stamens, pistils, and other protuberances, excepting in so far as they can be accommodated to the general spirit of his work. Anything requiring deep undercutting, or which is liable to be easily broken, should be religiously avoided. As a rule the flatter the adaptation the more useful and valuable will it prove. Every adaptation of forms thus thoroughly studied would always carry with it some suggestion of natural growth and recall that essence of vitality which is the soul of art, never to be gained by a



superficial imitation of Nature, but resulting from penetrative study broadly and conscientiously undertaken.

From the consideration of vegetable forms we may pass to those of animals. Here the same rule must prevail. Anything like bold realism and naturalism must be avoided. Thorough study must prevail over a slavish imitation of form merely as such. That is to say, those characteristics are to be selected which give force, energy, vitality to the object represented, without adhering to a tame reproduction of detail which would detract from the impressiveness of the work as a whole. Thus in the treatment of the forms of birds, what would be required would be a careful attention to the lines which distinguish the individual selected from every other kind of bird. Anything beyond this, as the attempt to reproduce closely the texture of single feathers, or other minute details, would generally be worse than useless in decorative work. So also in representing animals, the qualities to be sought must be those which are distinctive to the individual, not a slavish following of characterless detail. The dog must have all the marks of the canine nature upon it, in shape and movement. The horse must move and live. The stag will embody lightness, ease, and elegance; the elephant, solid ponderosity and strength; and it will be necessary to keep these qualities specially before the mind as the most important in producing them.

From the consideration of animals, we may rise to that of the human figure. Here, as in the other cases, broad character must be the basis of whatever is required for sculpturesque decoration. Strong expressions of feature and movement, where strength and motion are required, should be conveyed broadly and with a large style of representation. Folds of drapery should be represented generally with as few lines as may be. The disposition of figures should be as little crowded or confused as possible. Dignity and simplicity should be always aimed at with a due regard to place, subservience and harmony. For it must be remembered, as has been already said, that ornament and decoration are for the purpose of giving value to the larger idea, and must not distract attention or detain it too long from the totality of the structure.

Thus it will be seen that the training of a student of architectural decoration should differ from that of one preparing for pictorial representation, whose labour must be wholly given to the complete and exhaustive study of that which he sees around him. The former, however, cannot make Nature in its entirety of form, light, shade, and colour his only field. The structural idea must be his main one, and everything else must be subservient to it. He must go to Nature in search of those qualities which he requires, and let all others go by him, if not unremarked, unrepresented. By this mode of study, by carefully limiting his labour, he will concentrate his energies. What he does select he will be able to represent in a more characteristic manner. His work will have the impress of a purpose upon it. Instead of occupying himself with an elaborate pictorial treatment, undigested and unselected, of what he sees around him, he will choose what is best adapted to his purpose. His objects for representation chosen, he will then select those qualities in them, and only those, which recommend themselves to the end which he has in view. The very faculty of thus choosing will be useful to him. It will contribute to purity and simplicity of workmanship, to the elaboration of large ideas, instead of to confused and insignificant modes of appeal which often smother the broader purpose.

Such a manner of studying the essential properties and characteristics of things would also react favourably on the structural faculty. It would tend to give an organic vitality to architectural design. It would enable the architectural student to arrive at *law*—Nature's law—in the putting together of material. And though such a result might be as indirect as it would be unsought, it would be sure to give some kind of colour or modification to the inventive faculty in structural design. At least it would educate the perceptive faculties in the appreciation of forms of grace, beauty, and expression. How much more valuable to the architect would such a course of study and observation be than the aimless dabbling in pictorial representation in which so many waste and dissipate their energies, and in which they only rarely excel! For it is seldom that the firm lines and uncompromising fulness of delineation, the result

of an architectural training, lend themselves to the genial flow and easy movement required for the less severe and more imaginative pictorial mode.

## ELY AND SALISBURY CATHEDRALS.

[BY A CORRESPONDENT.]

MUCH has been written about the glorious cathedral of Ely. No one can go into it and come away without realising that there can be scarcely any more perfect style than the Early English, particularly as displayed in the Galilee porch at the west end, and also at the east end. There are the simple forms—the product of true common sense—the mouldings apparently complex, but yet simple in their planning when carefully studied. All these details of the fully-developed Early English style tempt me—not a tyro—to say that the utmost ingenuity of man could hardly devise anything better. The scheming of the wall arcade of the Galilee in two distinct orders, the one at the rear springing from a higher level than that at the front and the arrangement of the vaulting display the work of a master mind. For a western doorway that at Ely is more like a Continental example in its proportions, though not in other respects resembling foreign work. But then it is the only west door, so ought to be of some importance. Whereas the west façade of a cathedral like that at Rheims boasts three grand portals, those at the side but little inferior to the central one. The Devonshire marble used in place of the original Purbeck shafts is very inferior in its effect, and makes a sorry substitute for the original material. It is remarkable how far this half-stone, half-marble, from the Isle of Purbeck was carried. One would have expected to find some more local material used. But it is sad to think how wanting in durability this noble-looking stone has proved, even when used internally. It is frequently said at the present day that, as a matter of principle, we ought to use the materials of the locality where we are building. Yet this, as we know, was by no means the invariable practice of the Middle Ages. Caen stone was brought to England (the water-carriage of course much helped its easy transportation), and the Normans were doubtless fond of the material of the country whence they came, besides being sensible of its being so easily workable. The pavement of the nave of Ely Cathedral is composed of unpolished marble in different patterns, but I question whether this will stand wear and tear as well as if polished.

In the choir triforium one notices how the effect of the later work by ALAN DE WALSINGHAM is marred by the tracery being thin and flat. This is not so in the earlier architecture, which is more effective. The cusped arch of very elegant design over each of the choir stalls looks well, every compartment containing sculpture of some scene from Scripture. Above is canopied tabernacle work, a variety from the more usual feature of a forest of pinnacles, &c. In the choir screen, the mixture of oak and metal work is not happy: it seems a pity that oak was not used entirely here. In the groining of the lantern Mr. GAMBIER PARRY, by arranging the colours alternately between the ribs, has cleverly managed to convey the appearance of strength. The painted figures of angels bearing various musical instruments are certainly exquisitely conceived. In the east end of the cathedral the fine arched windows were skilfully designed by the Mediæval men, and not only is there the charm of the general pyramidal outline formed by each arch springing from a different level, but the side windows become more narrow as they retreat from the central one. I am aware that other Mediæval examples are arranged in much the same way, but think it worth drawing attention to, because in modern work, in the rather rare cases where a "quintet" is employed, all the windows are generally made of the same width, though of varying height. Turning to the modern work at Ely, the colouring of the reredos is certainly most successful. The effect of the alabaster by itself is rich, but the delicate and sparing use of gilding, and the tender greens and reds of the other marbles used, combine to make a harmonious whole. The figure sculpture is very slightly tinted and gilded. The work does not look *unfinished*, as it is rather apt to do when colour is applied to stone or alabaster.



The sloped coping to the lower part of the buttresses to the Lady Chapel (or Trinity Chapel) at Ely, where they are thicker below the coping, has a pleasing look. The exquisite and rich wall arcade continued round the whole of the interior of this chapel is probably the finest thing of its kind in Europe. But the clunch or chalk of which it is constructed has a rather whitewashy appearance, inferior to that of the regular freestone. There can be no more legitimate, yet more elegant or effective, way of decorating the interior of a church than by a ground-storey wall arcade running all round it, and seeming to bind all together. It is even better applied here than externally. The arcade is in truth a richer mode of getting somewhat the same effect obtained by the fashionable dado. The exterior of the lantern to the cathedral is scarcely successful; the timber covered with lead looks flat; of the internal effect, of course, there can be but one opinion. It is one of the chief glories of the noble cathedral, and, as has been well said, "seen from afar off it is as completely a landmark to the whole of the fen country as is the tower of Mechlin to the lowlands of Brabant." The effect of one noble western tower, as at Ely, is in most cases better than two towers of necessarily smaller dimensions.

In the guide-books much is said about the superiority of Salisbury over other cathedrals, owing to its being built all in one style, except the tower and spire, which are a little more ornate, and exceedingly well planned, though of later date than the rest of the cathedral. There can be no doubt whatever about the harmony, completeness, and beauty of proportion of the exterior. But is there not a suspicion of coldness and want of life in it? The evidence of several ages of personal work displayed in a cathedral where Norman, Early English, Decorated, and Perpendicular styles exist side by side, gives an intensely human interest to the building. Doubtless as an architectural composition only it is not so perfect, for the tastes of the archæologist and historian in this particular are in conflict with those of the architect. The exterior of Ely is by no means equal to that of Salisbury, but there is more variety in it. In the latter, when the spectator has examined one part he has a general idea of the rest. Besides the perfect grouping of the cathedral itself, there is the charm of the singularly pastoral character of the surroundings, the ample space with soft green sward, the fine elms, and so on.

Every time I visit Salisbury I become more convinced that one grand central tower, or tower and spire, is what is to be aimed at in the design of a cathedral. The picturesque outline of such a ground-plan, with its double transepts and deeply projecting fine porch, is better than two puny western towers and a central one of insufficient height. In looking at the roof, I cannot avoid asking why should not lead roofs have ornamental bands, and thus become more connected with the substructure? It is true that in Mediæval work, except in the foreign *fleches*, one does not find such ornamentation; but it might be attempted nevertheless. Speaking of the interior of this and other churches, it should be noted how the horizontal lines and strings, or divisions, carried round the ends of the transepts, help to connect the composition.

One of the advantages of a church being built all at one date is that the various parts are well fused together. For example, the parapet and buttresses to the north porch range with the aisle roofs, while the ridge of the roof of the former unites with that of the aisle. In the same way the great screen wall (for that is what it really is) to the west façade is ingeniously contrived so as not to conspicuously appear a screen. The suggestion of the clerestory windows, and the parapet above them, is carried round to it, and the aisle roofs returned on the east side of the screen. There is also a raking species of ornamental buttress above the aisle parapets, which further serves to link together the aisles and western turrets. In the nave piers the central main shafts have double neckings to the capitals—*i.e.*, one a little below the other. This is effective, as it gives extra depth where wanted. On the other hand, the capitals of the subsidiary shafts have only single neckings.

I cannot say that the contrast between the dark polished Purbeck marble shafts and the light-coloured freestone is pleasing. As a matter of harmony of colour it would have been better had the shafts been of greyish Forest of Dean or red Mansfield stone. Many people object *in toto* to the

colouring of the stone mouldings, as in the choir, no matter whether of Mediæval authority or not. It is averred that the effect of light and shade is thus quite obliterated. I cannot help thinking that there is a little truth in this objection, as they are certainly somewhat neutralised and less observable. But are not the lightness and vigour as well as warmth of the colouring an improvement on the coldness of the bare stone? The effect of the crudity of the greens and reds at Salisbury is not happy, though supposed to be a faithful restoration of the ancient colouring. Still, one ought not to judge by a single random example, but rather turn to look elsewhere, at such beautiful work for instance as that by the veteran GAMBIER PARRY at Ely and at Gloucester Cathedrals. The correct principles of the harmony of colours are certainly better known now as regards wall-painting in England than in the Middle Ages.

The gorgeous chancel screen at Salisbury must be looked upon as a fine composition of the nineteenth century. The mixture of silvering and gilding is a novelty, and I think successful, and in design and execution all that could be wished. The gas standards within the altar rails are also magnificent. But the important question arises, does all this elaborate metal-work, however beautiful it may be in itself, suit the character of the building and its surroundings? I imagine there can be but one answer, and that in the negative. A rich uncoloured wrought-iron grille, sparingly gilded, or, better still, a handsome oak screen, would have better harmonised with the thirteenth-century work around. Again, one cannot but feel that no quantity of colour in the great arcades of the choir, or any amount of richness in the stalls and seats, can compensate for the absence of tabernacled canopies which are so powerful in emphasising and dignifying a cathedral choir. This is a great want at Salisbury.

The huge and unwieldy organs now built in our ancient cathedrals, where no structural provision for them exists, have resulted in more than one instance in Architecture being rather pushed to the rear by her sister, Music. The enormous pedal pipes and bellows in the north transept of Salisbury Cathedral obstruct a considerable part of some of the windows.

## GLASS-PAINTING.

ON Tuesday evening Mr. Hardman delivered an address to the students of the Birmingham Society of Arts and School of Art on the "Art of Glass Painting" at the Central School, Midland Institute. The lecturer asked his hearers to consider first the principles upon which the art of stained glass was founded. The art was primarily an architectural art, and not a pictorial one. Windows were not built to receive coloured pictures, but, being necessary features of buildings, they were gradually ornamented for richness and effect, as walls were ornamented by carving and painting. The ornamentation was purely decorative, so that the lines of the architecture were never lost. The windows were simply part of the buildings, and as such, when ornamented, decorated the whole. Stained glass, as an architectural art, should be judged accordingly, and if this were done many criticisms which were passed on decorated windows would be avoided, and people would derive pleasure from what sometimes they condemned. The development of the art might be traced, guided by these principles, with the stages of architecture, from the period of the round arches to that of the pointed arches, and on to the time when the principles of architecture were lost in the strife to obtain a pictorial representation. The art commenced with a sort of mosaic—the colours being on different glasses, with a framework of lead. The earliest coloured glass was of the Norman period, consisting of simple lines painted in opaque pigment on the glass. From simple forms of outline the next stage was geometrical forms—such as scrolls and conventional leaves. Then came figures drawn solely by lines without any shading, drapery being represented by a clustering of lines. The round arch of the Norman period gave its form to all the ornamentation, and when the Pointed arch came in the ornaments became more pointed. The lecturer here expressed his regret that the name of Early English was so often perverted. Furniture and brasswork, he said, were exhibited in shop windows as Early English which were not of the A.D. 1250 style, but of the style of Queen Anne, or a later period. The foliage in a conventional form, the lecturer continued, gave way to a truer representation of nature, but the principles of architecture were still adhered to. In the Early English period the shading of figures was resorted to,



and forms were still more naturally produced. In the fourteenth century a discovery was made which formed an important feature in the stained glass of a later period. In the earliest period the colouring was on separate glasses, but in the later period they discovered a method of staining white glass yellow, and securing various shades of that colour. Then bands of colour were introduced, so that the most beautiful effects were produced. In the thirteenth-century style the figures were placed in panels, with diapers in red or blue glass, but in the later period the figures were placed in canopies, which formed a most important feature in the fourteenth-century glass. This was more the case in other countries than in England, the canopies in some countries being made to a very great height. In the fifteenth century—the Perpendicular period—there was a great change. More attention than ever was paid to natural forms, and a greater attempt at perspective was made; and the great principle that it was an architectural art to be carried out on the flat was observed. The stains in this period were not confined to yellow or white glass, but it was put on blue glass, and thus produced a green colour, while greys and blues were added. All this while the progress of this art was but the prelude to its decay. Glass-painting rapidly declined, till it became, not an architectural art, as it commenced, but a pictorial art, losing altogether its former character. The lecturer then proceeded to touch upon the technicalities of the art. He explained that the modern process of enamelling glass did not produce such bright and beautiful colours as the mosaic style, when each colour was placed on a separate piece of glass. Thus the want of knowledge on the part of the former professors of the art resulted in more brilliant specimens than were at present produced when several colours were introduced on the same glass. Then it was necessary to make the drawing to be represented on the glass suitable for the work to be done, having due regard to the introduction of the leads. The lecturer explained the difference in dealing with a long single light, say 16 feet long and 2 feet wide, and a Decorated window with four lights and an elaborate tracing, and by means of illustrations showed the difficulties to be encountered. He explained the various methods of painting, and urged students of the art not to jumble up together different styles of designs, nor to use too many colours, for the simpler the colours the better. He deprecated the system of “ancienting” glass, to make the decorative work appear as if it had been mellowed by the atmosphere of ages. It might look what it represented to be just now, but in a few hundred years, instead of looking mellowed, it would be dark and unsightly.

## HOUSING OF THE WORKING CLASSES.

THE Royal Commission on the Housing of the Working Classes has issued its report relating to Scotland. Witnesses from the principal cities and towns, and from the agricultural districts, were examined. The general feeling expressed in the evidence as to the large towns is that the condition of the housing of the working classes, though in many cases deplorable, is not of the extremely miserable character described as existing in London, that efforts have been made for its amelioration not without marked effect, and that the causes of existing misery are to be ascribed as much to the habits of the people as to certain outside influences.

“The single-room system appears to be an institution co-existent with urban life among the working classes in Scotland. What in England is known as the tenement system is so firmly established that even in modern legislation the word ‘house’ is used for any separately occupied portion of a building, while the word ‘tenement’ represents the whole edifice, the English use of the terms being reversed.

“The size and height of ancient Scotch houses, in the old town of Edinburgh for instance, would be sufficient to show that they were always intended for the habitation of many families, even if this were not a well-known historical fact, though, of course, there are a good many houses which a century ago were occupied by persons in good circumstances now converted into tenement-houses (in the English sense). The system is so firmly established in Scotland that the Scotch law provides for the difficulties which may arise out of the joint-ownership of a house in portions. It is set forth in the title that necessary repairs of the roof, the drains, or the water-pipes must be borne by all the owners in certain proportions, and it is said that no practical difficulties ever arise out of the arrangement.

“It is not in Edinburgh alone that are found these large tenement-houses (the English expression is used for convenience), nor are they always ancient buildings. At Paisley they are said to be on the increase, and it seems in Scotch towns to be as usual to run up an edifice of great height, containing a number of separate dwellings, as it is in England to

build a row of two-storeyed cottages. At Glasgow it is acknowledged that an extraordinarily high proportion of its population live in single rooms, but it is said that the single rooms are much larger than elsewhere. The single-room system is an incident of the tenement system. In Edinburgh there are said to be 14,000 single-room tenements; in Glasgow 25 per cent. of the whole population live in single rooms; and in Dundee there are 8,221 houses of one room containing 22,870 inhabitants. The chief reason for this seems to be that the occupants of the single-room tenements cannot afford to pay for more accommodation. The custom of the poorer classes in Scotch towns may have something to do with their mode of life, but it is probably for the most part a question of rent. It must be borne in mind that mill girls in parties of two or three, widows, married couples with no children, and others who form a sensible proportion of those who live in single rooms, may inhabit them without harm. In Edinburgh rents seem to be very high, and consequently they bear a large proportion to wages, and are said by one witness to amount to a fourth of the wages.”

Much evidence was given by witnesses from large towns to the effect that a considerable proportion of the labouring classes in Scotland would be able to house themselves in far greater comfort if it were not for the large sums they spend in drink, and the Commissioners state:—

“The dilapidated condition of many of the habitations of the poor is another great evil. In some of the old parts of Edinburgh there are houses which are too decayed to be repaired, and the same process has taken place with regard to the inhabitants of the most miserable quarters which was noticed in the portion of the report which referred to London. When clearances have been made accommodation has been supplied for the more respectable artisans, but the poorest section of the population have been left to inhabit the defective houses which remained. Structural defects are not found solely in old quarters of the towns. At Glasgow the custom of building houses in hollow squares was said to be a great evil, and the back-to-back system in the crowded courts was described as ‘the curse of Glasgow.’ Evidence was given which showed that there is a sufficient supply of houses for the better class of the working population in Edinburgh, but that the wants of the very poor have not been met. The legal expenses, as in England, are found to be a great difficulty, especially in connection with the system of feus.”

Most of the urban witnesses spoke to an improved state of things in the towns, and the Commissioners go into details to show what work has been done to ameliorate the condition of the dwellings of the working classes. In Edinburgh the improvements have cost the city 300,000*l.*, nearly 3,000 houses occupied by the poor having been cleared away. In Glasgow 1,000,000*l.* has been spent, 80 acres have been purchased for clearance, and about 30,000 people have been displaced out of 50,000, whom it was intended to displace. At Aberdeen 800 people have been displaced, and at Greenock 2,000, houses having been provided for about 600 of those turned out. At Leith they have spent 100,000*l.* in doing so little that the Commissioners think that the Corporation should not be relieved of the obligation to carry out the scheme. At Dundee some of the worst quarters of the town have been demolished, but a good deal remains to be done. In each case the death-rate declined after the improvements had been made. In all the Scotch towns, the Commissioners remark, there seems to be a general feeling that there is no obligation to rehouse people turned out. They add:—

“Although the evidence on which the foregoing is based shows a not very desirable state of things in the housing of the working classes in the towns of Scotland, yet on the whole the only persons to whom reform might be looked for—the representatives of the more active local authorities—are not discontented with the condition of affairs. Certain amendments of the law appear to be called for. Some kind of consolidation is urgently necessary, and the introduction of a uniform system of administration in sanitary matters is required. The absence of provision in the Scotch Public Health Act of building by-laws is a considerable defect, and it is recommended that they should be made general throughout the country, where there is no private Act or Dean of Guild Court, which has a general supervising jurisdiction. Much can be done to mitigate the evil of the single-room system by raising the standard of cubic feet of air required for each individual, and by making provision that the standard shall be rigorously enforced. The regulations as to underground dwellings should also be made more stringent. The Commissioners recommend that the Burgh Police and Health (Scotland) Bill, which is now before Parliament, and which contains many provisions likely to improve the condition of the dwellings of the working classes, should be passed into law. A reform which would have a marked effect would be the reduction of the cost of the transfer of land and that of small houses, which, in connection with the feuing system, renders the building of workmen’s dwellings very expensive, and puts great difficulties in the way of the labour-



ing classes either possessing their own houses or obtaining good accommodation at a low rent."

In reference to houses in rural districts, the Commissioners found a much better state of things in the Lowlands than in the Highlands and Islands, and it is chiefly with the latter that they deal. They give the following description of the crofters' hovels, such as exist in Skye and the Hebrides:—

"Some of the so-called black houses are considered fairly comfortable, but the majority are undoubtedly confined, dark, miserable, and unhealthy. They are built by the crofters themselves without skilled labour, and without imported materials. They are constructed of blocks of stone without mortar, and are completed with turf and other materials, hastily and rudely put together. They differ very considerably in condition, according probably to the means and tastes of the occupier, the worst being found in some parts of Skye and the Island of Lewis. Some of them, for instance, have only one entrance for the cattle and the inhabitants, and have no partition between the byre, the kitchen, and the sleeping apartment—all the inhabitants, human and animal, being under the same roof in the same undivided space. Many of these houses have no windows at all, light being admitted only by the door or the aperture through which the smoke escapes, the fire being usually of peat burned on a flat stone in the centre of the house."

There are, the Commissioners say, other black houses in which there is only one door, but which contain a partition between the cattle and the human inhabitants. These may be called the improved black houses, and are the work of co-operation, more or less, between the tenant and the landlord, the tenant bearing the greater portion of both labour and cost. The white houses are, the Commissioners state, also found in the Western Highlands and Islands, but they are not peculiar to one locality. They differ from the black houses, being built partly with skilled labour and with materials imported from other districts, and are built upon a system of co-operation between the landlord and tenant. On the whole, they may be said to be half supplied by the landlord and half by the tenant, the greater portion of the expense falling on the latter. The Commissioners add:—

"The question of compensating the tenant for his share in the erection of the dwelling is, in the view of the crofters, one of the chief impediments to their undertaking any improvements in their houses. The system varies very much on different properties according to the estate regulations; but as regards the black houses, when a tenant leaves he is generally allowed to sell or take away the roof of the house, or he receives in lieu some compensation. In the case of the white houses the tenant cannot lay claim to any compensation in case of eviction or re-entry, although some compensation is frequently awarded in such cases. In that event it is almost entirely dependent upon the goodwill of the landlord, which, in the opinion of the Commissioners, should not be the case, and the amounts hitherto awarded have been regarded as not liberal."

The Commissioners call attention to another class which it would be very difficult to deal with, namely, those inhabited by the poorest class of sub-tenants and squatters. In some cases, the Commissioners state, these people are the offspring of the recognised occupiers of crofters' holdings who have remained and multiplied on the ground, either sharing the already-crowded dwelling of the head of the family, or putting up habitations in defiance of estate regulations. But the worst type is to be found among the crowds of squatters in parts of Lewis, who construct mere hovels, made, perhaps, of a few sticks and turf, without stone, and built in defiance of the estate rules, and against the orders and will of the proprietors. These people appropriate land, possess and pasture stock, but pay no rent, obey no control, and recognise little or no authority. They support themselves by casual labour and the simpler kinds of fishing, and they lead a wandering life in search of work. The chairman of the Crofters' Commission, add the Commissioners, considers that migration or emigration only can deal with this serious evil.

The Commissioners are of opinion that much good will ensue from an improved system of local government in the extra-urban parts of Scotland. They urgently recommend the constitution of larger sanitary districts, and that the local authorities should be elected by the ratepayers. They consider that if these administrative reforms were carried out many of the evils in connection with the dwellings of the labouring classes in the districts in question could not be of long continuance, as the combination of improved sanitary inspection with increased public interest in local government would tend to remedy the present deplorable state of things. Lord Salisbury did not think that the investigation of this subject was sufficiently complete to justify a recommendation by the Commissioners.

**Natives** of the new Congo State have been sent by the African Association to Antwerp, and are now busy in constructing a small settlement, called "Vivi on the Scheldt," within the precincts of the exhibition.

## TESSERÆ.

**The Royal Academy and the Institute of Architects.**

SIR M. A. SHEE, P.R.A.

I THINK that the law prohibiting any of its members belonging to any other institution or society of artists is no longer necessary in the Academy, and the Academy have long ceased to act upon its spirit. The Academy, as it was originally formed, and as it is now established, depends on the contributions of the public. It was therefore necessary to guard the institution sufficiently to prevent a decline of the funds, from a deficiency of the talent that was requisite to attract the public. It became essential, therefore, that the members of the Academy should be restricted from contributing their exertions to any other establishment. If Mr. Cockerell had become a member of the Society of British Architects, and had made no reference to the Academy, I am convinced the Academy would never have taken notice of the circumstance. But Mr. Cockerell, feeling a delicacy on the subject, applied to the Council of the Academy for advice on the occasion. The reply to Mr. Cockerell was simply this—that the Council are an executive body; they have nothing to do but to execute the laws of the institution, and conduct its affairs according to those laws. They could, therefore, only refer him to the laws of the Academy, which they conceived to be conclusive on the subject, until they were removed.

**John Van Eyck and Oil Painting.**

SIR C. L. EASTLAKE, P.R.A.

It may now be expected that some opinion should be expressed as to Van Eyck's claims to the fame of an inventor. The technical improvements which Van Eyck introduced were unquestionably great; but the mere materials employed by him may have differed little, if at all, from those which had been long familiar. The application of oil painting to figures and such other objects as (with rare exceptions) had before been executed only in tempera, was a consequence of the improvement in the vehicle. Still, if we ask in what the chief novelty of his practice consisted, we shall at once recognise it in an amount of general excellence before unknown. At all times, from Van Eyck's day to the present, whenever nature has been surprisingly well imitated in pictures, the first and last question with the ignorant has been—What materials did the artist use? The superior mechanical secret is always supposed to be in the hands of the greatest genius, and an early example of sudden perfection in art, like the fame of the heroes of antiquity, was likely to monopolise and represent the claims of many. It is apparent that much has been attributed to John Van Eyck which was really the invention of Hubert, and both may have been indebted to earlier painters for the elements of their improved process. It would be useless now to attempt to divide these claims; and although some important discoveries of the elder brother may be ascribed to the younger, it may be safely concluded that much was also due to the investigations and intelligence of the latter. The works of John Van Eyck show that he was endowed with an extraordinary capacity for seeing nature. Thus gifted, and aided by the example and instructions of Hubert, a world was opened to him which his predecessors had not attempted to represent. The same mind which was capable of receiving such impressions was also likely to devise suitable means to embody them and to extend the language of imitation.

**Contrast in Ornament.**

R. N. WORNUM.

There are two provinces of ornament—the flat and the round: in the flat we have a contrast of light and dark; in the round a contrast of light and shade; in both a variety of effect for the pure gratification of the sense of vision. In the first case a play of line is the main feature; in the second a play of masses, and colour may be an auxiliary to both, but it acts with far greater power in the flat, as it is entirely dependent on light. Ornament, therefore, is a system of contrasts; the object of study is the order of contrasts; the individual orders may vary to infinity, though the classes are limited, as sight-line or curved-line series of simple curves or clustered curves, series of mere lines or natural objects, as flowers arranged in the orders of these different series. For example, the common scroll is a series of spirals to the right and left alternately; the Roman scroll is the acanthus plant, or brank ursine, treated in this order of curved series. Such a treatment of a plant is termed conventional, because it is not the natural order of the growth or development of the plant. Where the exact imitation of the details and its own order of development are both observed the treatment is natural, and an object so treated, independent of any application, is only a picture or model, not an ornament. To be an ornament it must be applied as an accessory decoration to something else. The production and application of ornament are distinct processes, though they cannot be separated in applied design. A proper



distinction between a picture or model and an ornament is of the utmost importance to the designer, for the mere power of imitation of natural objects, and even their exact imitation, is perfectly compatible with the total ignorance of ornamental art. The great art of the designer is the selection and arrangement of his materials, not in their execution. There is a distinct study of ornament wholly independent of the merely preliminary exercises of drawing, colouring, or modelling. A designer might produce a perfect arrangement of forms and colours, and yet show the grossest stupidity in its application.

#### Art and Botany.

PROFESSOR E. FORBES.

A small amount of botanical study would prove a profitable capital to the ornamental draughtsman. Science would teach him how every stem is adapted for its own peculiar style of foliage, and how an incongruous mixture of leaves, fruits, and flowers cannot give the pleasure to the eye that, even when it is uninstructed, it so rapidly and delightfully derives from the contemplation of combinations the elements of which are truthful. The leaf of a monocotyledonous plant attached to the flower of a dicotyledon strikes the spectator who has no knowledge of botanical science as unnatural, for the eye learns, and compares, and recollects, even when the understanding is obscure and cloudy. To the botanist who sees in all the structures and stages of vegetable organisms heaven-devised beauty and the manifestation of Divine foresight and love, such mistakes become still more offensive. The mere literal copying of nature is not what is demanded; that would be contrary to nature's own plan. The value to a designer of a scientific comprehension of his models is the insight it gives him into the possible variations of the original, and the inexhaustible sources of grace and beauty, whence so much that is new and yet consistent may be derived towards the following out of nature's own idea.

#### Why Architecture Pleases.

SYDNEY SMITH.

The beauties of architecture I should conceive to be referable to the beauties of utility, of regularity, of delicacy, and of association. Why is the west window of the cathedral at York beautiful? Let us endeavour to follow what passes in the mind in looking at this celebrated piece of architecture. It is, in the first place, Gothic, and there is an association in favour of Gothic architecture; we have heard it is beautiful, and are prepared to admire it. The stonework is very light, and therefore does not obstruct the passage of the sun's rays, nor does it give us the idea of labour uselessly employed, but on the contrary the idea of delicacy, which I have before stated to be a cause of beauty. It is full of regular figures neatly cut, which it is not easy to make of stone. The whole is a regular figure, and bears a just proportion to the size of the building. As to the different orders of architecture, it is quite impossible to assent to the observations of those who would contend that their proportions are absolutely beautiful, that nature has made these proportions originally a cause of that feeling, independent of any utility to which those proportions may be subservient, and of any association with which they may be connected. The common sense of the business appears to me to be this: I see a pillar, I conceive it as erected to support something. I know the nature of stone and its strength. If the proportions are so managed that I conceive the thing to be supported will fall, it gives me the idea of weakness and frailty, which is unpleasant; if they are such as to indicate a much greater degree of strength than is wanted, then I am equally disgusted. Between these two extremes all proportions are naturally of equal beauty.

#### Historic Importance of Embroidery.

CANON ROCK.

For the genealogist, the lawyer, the herald, the historian, the reader of Mediæval poetry, such of these old liturgical garments as bear armorial charges embroidered upon them have a peculiar value and a more than ordinary interest. These emblazonries not only recall the names of persons bound up for ever with this land's history, or bring to mind some wild but graceful legend like that of the fabled swan, still borne by the baronial house of Stafford as its supporter, but may again serve as they once before have served to furnish the one lost link in a broken pedigree, or unravel an entangled point before a law tribunal. Towards the end of the fourteenth century a memorable suit was begun at Westminster by Richard Lord Scrope, in defence of his right to the arms "azure, a bend or," against the assumption of them by Sir Richard Grosvenor. Amongst the witnesses on that occasion were many people of eminence. Sir Simon Parson, of Wensley, whose fine grave-brass still in that church is given by the Brothers Waller in their beautiful work, brought forward in court an alb—a long linen kind of gown worn by priests at mass—the apparels to which were embroidered with the Scrope's arms, "azure, a bend or," of very old work. The abbot of St. Agatha's, founded by the Scropes,

near Richmond, Yorkshire, deposed that the same shield was figured upon altar frontals, upon vestments, and upon a corporax-case of silk, all belonging to that abbey church. Geoffrey Chaucer, the poet, when sworn and examined on behalf of Sir Richard Scrope, said that all his lifetime he had seen the above-mentioned arms in banners, glass, paintings, and vestments, and they were commonly called the arms of Scrope.

#### Enamel.

A. W. FRANKS, M.A.

The term "enamelling," in its widest signification, is applied to the art of ornamenting any substance with a vitreous material, to the surface of which it is made to adhere by heat; so that not only metal, but also stone, earthenware, and even glass itself, may be said to be enamelled. It is, however, more usual to restrict the term of "an enamel" to metal work ornamented in this manner, the one requisite being that the vitreous decoration shall have been fixed in its place by fusion. There are several ways of disposing the enamel. It may have been sunk into cavities, as in the encrusted processes; it may have been floated over an engraved bas-relief, the details of which are revealed through its transparent body, a mode of decoration peculiarly suitable to silver, and which has been termed translucent on relief, or by the French *émaux de basse taille*; or it may entirely conceal the metal surface, as in painted enamels. Moreover, in encrusted enamels, the cavities to receive the enamel may be either hollowed out in the metal, constituting what is termed in French *champlevé* enamel, or a *taille d'épergne*; or they may be cells composed of a kind of filigree of narrow bands of metal, which keep the colours separate, and with their edges form the outlines of the designs. This latter process is known as *cloisonné* enamel, and is peculiarly suitable to gold, though commonly applied to copper.

#### Roman and Gothic Masonry.

J. H. PARKER.

The Roman walls are often faced with brick or with ashlar in small cubes, sometimes on the exterior only, more frequently both inside and outside; but the strength of the walls does not in the least depend on the facing, and the interior is more commonly plastered only for the purpose of receiving mosaics or frescoes, or is ornamented with slabs of marble, or with stucco, or with bronze. In Rome itself and in a great part of Italy the walls are almost entirely constructed of rubble or concrete, either of broken brick or rough stone, merely faced with cut stone or marble. In England and in Gaul the Roman walls are commonly built of rough stone with grouting, but banded together with layers of tiles at short intervals; and it is evident that the Romans depended more on their tiles or bricks for the strength of the wall than on the stone, and that the facing had nothing to do with the strength of the wall. In Mediæval walls this is reversed: the strength of the walls depends upon the ashlar, and, although the grouting often becomes a concrete mass, this was usually accidental. Double walls, with passages in them, could not stand if the ashlar was removed. In some cases, indeed, where the walls were very thick and had a passage in them, and the lime, being burnt on the spot, happened to be very good, the concrete mass remained as a rock long after the ashlar had been removed, as at Reading Abbey, but this was never the intention of the builders. The double walls of the Middle Ages were intended to form one whole, and appear to us almost a necessary part of the Gothic construction, although it is certain that the walls of Gothic buildings are not always so constructed. The interior is sometimes left rough and covered with plaster, and in country churches the exterior also, the walls being built of rubble only, but the double wall is clearly the more scientific construction.

#### Mortar.

SIR R. RAWLINSON, C.E.

Mortar for sewer works in all cases should be capable of setting in water. Portland cement and lias limes make good hydraulic mortar. The proportions of cement, or of lime to sand, should not exceed two and a half of clean sharp sand to one by measure of ground Portland cement or lias lime. If clean furnace ashes or slag are available, there may be 2 of sand and one-half of ashes or slag, the whole to be mixed in a revolving pan, each pan-full to have twenty minutes grinding. When mortar is used with bricks, the beds and joints should be spread thick and full over the entire area of both bed and joint, leaving, when pressed into place, a bed and joint never less than one-eighth of an inch in thickness of mortar. In 4 cubic yards of completed brickwork there should not be less than 1 cubic yard of mortar incorporated. In making mortar or concrete, it will be of the utmost importance to use clean materials and to preserve them clean; the water used for wetting bricks and for mixing concrete and mortar must be free from silt. Concrete and mortar should also be used on clean surfaces.



## NOTES AND COMMENTS.

A DEPUTATION from the University of Aberdeen waited on Lord ROSEBERY as First Commissioner of Works on Monday, in connection with the proposed extension of the buildings, and with a view of obtaining a grant of public money for the purpose. The deputation might, however, as well have stopped at home for all they got for their pains. Rich people have always expressed the greatest willingness to help the needy, only, unfortunately for the needy, they are never in a position to do so when required. Thus Lord ROSEBERY pointed out that he only occupied a very distant outpost of the Treasury, which was the real fortress they had to storm, and, as regarded these matters, his functions were not those of the person who had to decide whether those additions should take place or not, but rather those of the plumber or glazier who, when the alterations were decided upon, was called in by the Treasury to do the work. Therefore he was afraid there was little good in convincing him. But they did not need to convince him of the great work that was being done in the University of Aberdeen, or the utility of any expenditure on Scottish education. The deputation then explained to his lordship that they understood they could not approach the Treasury without first obtaining his consent as First Commissioner of Works, otherwise they would not have plagued him. To this the Earl of ROSEBERY replied that he could not interfere—he was the plumber and glazier, no more. Lord ROSEBERY may be congratulated by his countrymen on the facility with which he has learned the amenities of the circumlocution office.

THE Russians would appear to be more at home upon the war-path than in peaceful competitions. A correspondent thus describes the Russian court at the Antwerp International Exhibition:—"The Russian section is being fitted up in a style more peculiar than beautiful. On entering it one passes from all usual style of decoration to a kind which probably owes its origin to the Tartars. The roof is supported on pillars of very irregular outline, painted yellow and red, and is covered with a light brown material spotted with purple. As yet no exhibits are to be seen in these courts in which one feels as if transported into the realms of mystery ruled over by the Czar."

THE Council of the Society of Arts state that they are prepared to award the following gold medals in connection with the International Inventions Exhibition:—Under the John Stock Trust, one gold medal, for the best application of Photography to a Permanent Printing Process, Group XXVI., Class 140; Group XXIX., Class 159. Under the Howard Trust, five gold medals, for the best exhibits (coming within the terms of the Trust) in the following classes:—One for the best exhibit in Group IV., "Prime Movers," Class 26, Steam-engines and Boilers. One for the best exhibit in Group IV., Class 27, Gas and Air Engines. One for the best exhibit in Group IV., Class 28, Means of Utilising Natural Forces. One for the best exhibit in Group XI., Classes 59 to 62. One for the best exhibit in Group XIII., "Electricity," Class 72, Distribution and Utilisation of Power. Under the Fothergill Trust, one gold medal for the most novel and best exhibit in Group XXVIII., "Philosophical Instruments and Apparatus," Classes 148 to 158, and under the Alfred Davis Trust, three gold medals to be awarded in Division II. of the Exhibition (Music), Groups XXXII. to XXXIV., Classes 166 to 180.

THE report of the Commissioners for Housing the Poor, just issued, for Scotland, states that the Corporation of Leith "borrowed 100,000*l.* for the purpose of clearing certain unhealthy areas which were said to be dangerous to the health of the inhabitants and to the town generally, but they have spent the whole of it without having begun to clear any portion of the unhealthy area except some twelve structures." This statement has been received with considerable surprise in the district, and, in commenting on it, the *Scotsman* observes that, in point of fact, the 100,000*l.* has been spent in obtaining the Act of Parliament, the purchase of the properties and leases within the area, as well as the arbitrator's fees and legal charges. Part of the loan has also been disbursed for drainage and paving opera-

tions, and the only reason that has prevented the Local Authority from making further clearances in the unhealthy areas is the provision in the Artisans' Dwellings Act which requires that houses for the working classes occupying the areas should be built "simultaneously" with the taking down of the old tenements. The Local Authority, consequently, first cleared area D, so as to open up and make approaches to the unhealthy areas; and until this ground is feued it would appear to be unnecessary, and in violation of the letter if not of the spirit of the Act, to demolish any habitable buildings in the other areas. The Commissioners also state that they "cannot recommend that the Corporation of Leith should be relieved from the obligations imposed upon them by law." This would appear to mean that the Corporation should be compelled to provide houses for the 3,505 persons who occupied the Improvement Scheme area when the Act was passed. At present there are 743 houses of 15*l.* rental and under standing empty in the burgh outside the area, while within the area the Local Authority have 69 unlet houses fit for habitation. In such circumstances, it is not to be expected that builders will feu ground for erecting additional houses.

To submit a work of art for exhibition at Burlington House may be compared to taking part in a game of hazard. But the gamester, though he hopes to win, knows that he stands the chance to lose. But artists, we opine, send their works to the Academy under the impression that at any rate, if not placed with infallible perfection of judgment, they will not be so placed that it would be better they had not been sent for exhibition at all. Mr. THOMAS WOOLNER, R.A., was entrusted with the execution of a statue, subscribed for by many friends of the late Lord FREDERICK CAVENDISH, to be placed as a monument to his memory in Cartmel Priory Church. In connection with this Mr. WOOLNER writes:—"Thinking that the subscribers would be interested in seeing the work, I obtained permission from the family to exhibit it at Burlington House. There, owing to the direction of the light, I found the statue so placed that neither likeness nor workmanship could be seen. I wrote to the authorities asking that the statue might be turned at a right angle to its present position, and have received a reply that the Council are unable to comply with my request 'as it would interfere with the whole arrangement of the room.' Considering that there are 138 works in the room, and that turning my figure round would interfere with no other work, your readers may judge the value of the reason given. As I am unacquainted with the subscribers, I adopt this method of telling them that the statue of Lord FREDERICK CAVENDISH cannot be fairly seen as it is now placed in Burlington House, the effect of my statue being as completely marred by an excessive glare of light as it would be by darkness itself."

WEDNESDAY was the first day for the reception of exhibits for the Artisans' Exhibition in Dublin. Along with the exhibition of Irish Industries the Fine Arts will be represented. A specially-constructed brick edifice has been prepared at the western side of the building for the Fine Arts collection, there being in this section more than 120 distinct entries, including several high-class paintings at present in the Royal Hibernian Academy, and a number of valuable works by Irish artists, the property of various ladies and gentlemen throughout the country, who have lent them for the occasion. Carved and other woodwork will be one of the notable features of the exhibition, including statues and altars in bog-oak, artistic domestic furniture, and other carved woodwork. There will be models of artisans' dwellings with garden, iron conservatory and bent-glass roof, American Swiss cottages, with apartments, labourers' houses, detached dwellings showing a perfect sanitary system, artisans' cottages, and two-storey houses in country and city. In the section for gold, silver, and precious stones, of which Dublin contributes the major part, there will be a series of designs for Irish medals, samples of jewellery manufacture, specimens of gold and silver engraving, and ecclesiastical art metal-work in gold, silver, and brass. Among the metal-work there will be other expositions of church art-work, specimens of hand-made *repoussé* brass-work, engraved brass tabernacle door, designs for iron balconies, wrought-iron tables, brasswork, &c.













*The Ark: The Yeller.*  
*By H. F. Hermann.*

*Published by H. F. Hermann, London.*













BUSINESS PREMISES: SOMERS TOWN.





ST. PANCRAS' MORTUARY.  
MESSRS. SAVILLE & SON, ARCHITECTS.

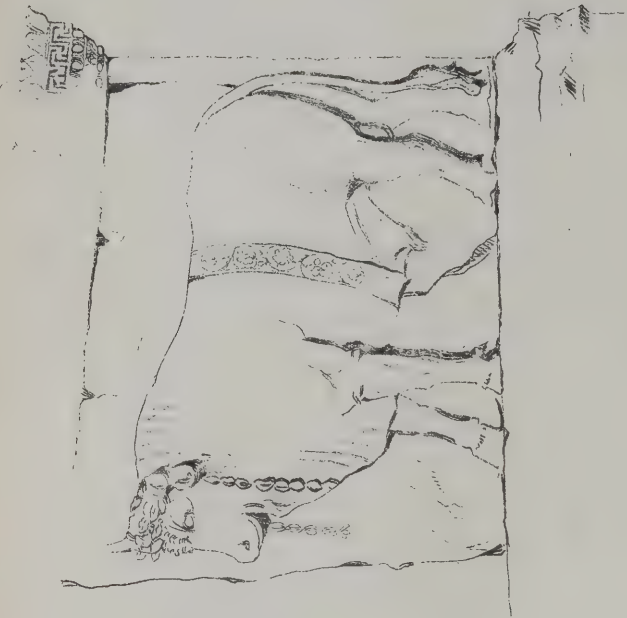
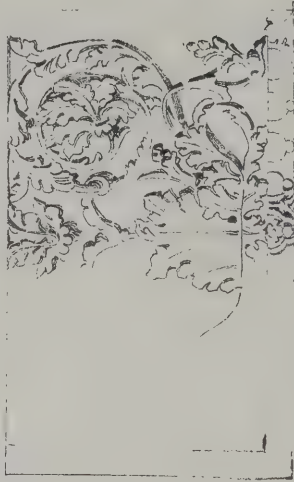
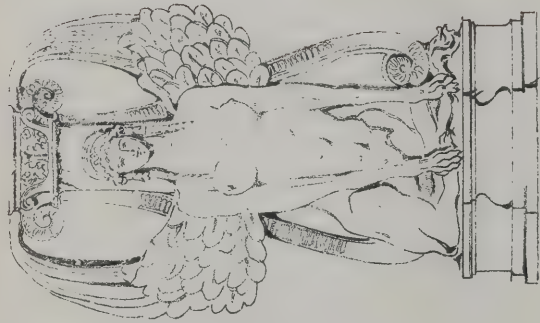




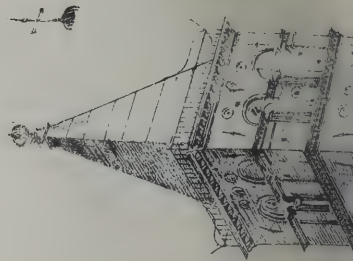
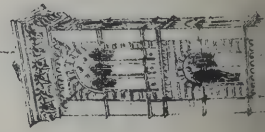




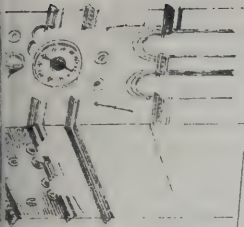
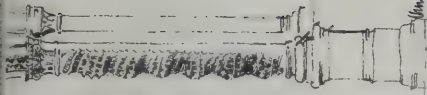
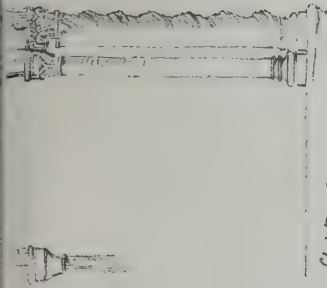
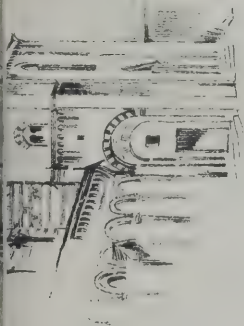




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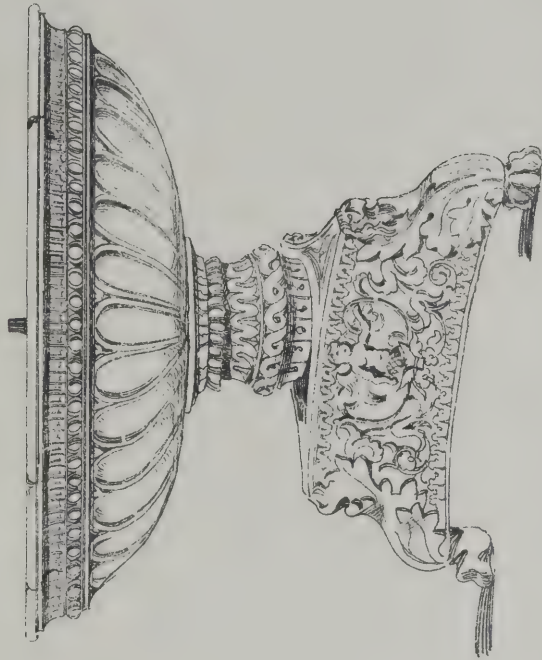
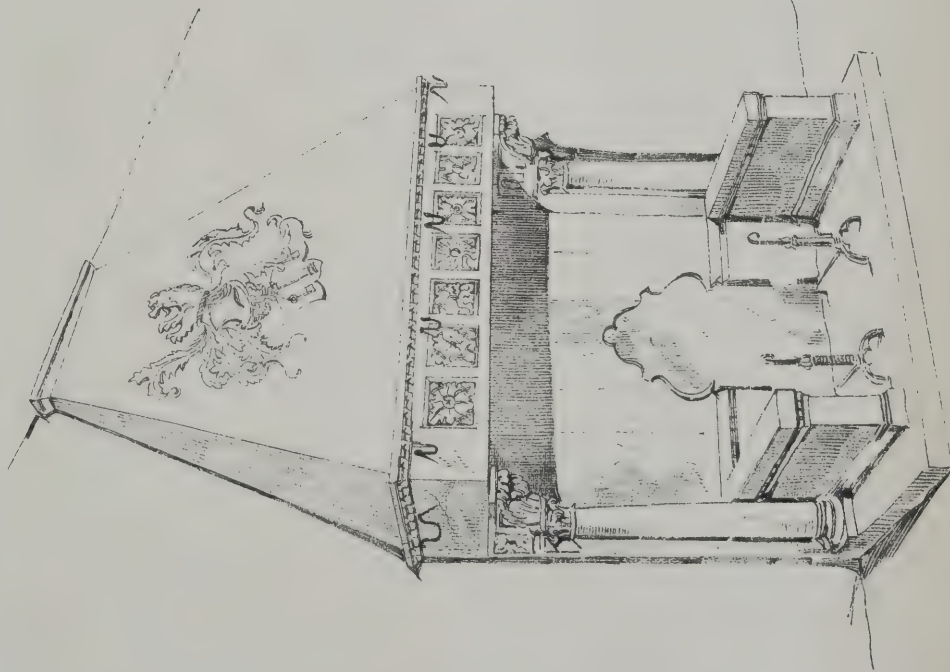


*S. Maria Maggiore Rome*

*Unster 2*

*S. Paolo fuori le mura  
Rome*

*Reginald Barratt*









## ILLUSTRATIONS.

THE ARTS: THE POTTER.

THIS illustration is the third of the series by Monsieur EHRMANN.

SKETCHES IN ITALY.

THESE sketches are by Mr. REGINALD BARRATT, and from drawings in pencil similar to those in the Royal Academy.

BUSINESS PREMISES, SOMERS TOWN.

THE accompanying illustration bearing the above title represents a block of buildings erected a short time ago at the corner of Church Way, Somers Town, and forming one of the numerous well-known grocery establishments of Mr. GEORGE CARTER. The end gable shown in the view indicates the width of only the narrowest part of the premises. The depth, at the other extremity, from the front to the back of the main building is 36 feet; and the ground and outbuildings in the rear extend 21 feet further back still.

The ground-floor storey is chiefly occupied by the shop. The basement and first floor are, for the most part, used for the storage of goods, which can be readily hoisted and lowered by means of a large lift, so arranged as to be directly accessible from the street, where the vans take up and deliver. The top storey consists entirely of rooms set apart for the accommodation of Mr. CARTER'S employes.

The front walls are faced with yellow malms. The bands are formed in Loughborough red bricks, the arches constructed in Reading bricks rubbed and gauged, and the stone dressings principally executed in Ancaster stone.

The work generally was carried out by Mr. W. ROYAL, from the designs and under the direction of the architects, Messrs. SAVILLE & SON. The balcony railings and other ornamental ironwork were executed by Mr. J. STONE, of Southwark, and the tiling in the window-heads by Messrs. MINTON & CO. The total expenditure was about 2,000/.

MORTUARY AND CORONER'S COURT, ST. PANCRA'S.

THE invitation to submit designs for these buildings was responded to by thirty or more architects, and, after considerable delay, the vestry have selected the plans sent in by Mr. EGGAR. Mr. A. W. SAVILLE (two of whose drawings we now publish) obtained the second highest number of votes, and Mr. H. H. BRIDGMAN came next.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE eleventh ordinary meeting of the Institute of Architects was held on Monday evening, Mr. Ewan Christian, President, in the chair.

It was announced that the Institute had lost an honorary member by the death of Sir Watkin William Wynn.

## Roman Remains in Algeria

Mr. ALEXANDER GRAHAM read an elaborate paper on "The Roman Occupation of North Africa, with special reference to the Remains in Algeria." He referred to the country as offering a great field for antiquarian research, from early times down to the Arab occupation, for the primitive races who had succeeded each other in turn had all left innumerable records of their presence, and the history of the country might be literally said to be written in stone. He also referred to the great value of the numerous inscriptions, affording abundant material for a history of North Africa. Ancient writers did not furnish much reliable information about the towns, either Phœnician or Roman, nor was their knowledge personally acquired. Among the travellers not one had been a painter or an architect; nevertheless, the eighteenth century travellers threw great light on the whole subject. But our indebtedness, as architects, was greater to Bruce than to any other explorer, on account of his careful drawings of some of the principal monuments, his familiarity with architectural knowledge, and his critical notes.

No continuous history of the country was recorded by its monuments. We found no Phœnician architecture or industrial art worthy of imitation, though it was deserving of study in connection with the development of the Roman work. Temples and stately edifices adorned the city of Carthage, but

the architecture was Greek work and not Punic. On the other hand, the Phœnicians were great in the art of navigation and water supply, which was the sole heritage the Romans received from them.

The author next alluded to illustrated and other works by French travellers and their general excellence, and then proceeded to explain the boundaries of the country known to the Romans as North Africa at the close of the third Punic war, showing how it was divided and what races inhabited it. The rise and progress of the Carthaginians were traced to their final subjection to Rome, reference being made to the apparent absence of any influence exercised by Carthaginian over Roman art. The spread of the Roman colony was followed from the sea to the desert, as evidenced by inscribed stones that strew the surface in every direction, sometimes where least expected. These stones form the real history of the country. There is a difficulty in assigning a precise date to some of the principal monuments on account of the fragmentary condition of inscriptions, but the reign of Severus may be credited with the largest number; a remark followed by an extract from M. Choisy's work entitled "L'Art de Bâtir chez les Romains," explaining how the building art under the Empire made rapid advances, while Classic architecture, as an art, was declining. The author referred to a map, showing all the principal towns in the colony of North Africa in the age of the Antonines, supplemented by a tabulated list of the principal cities, distinguishing the *coloniæ* from the *municipia*. Then, starting from the eastern frontier of Algeria, that corresponded very nearly with the old boundary between Numidia and Africa proper, he tracked the Romans along the coast, and then into the plains to the slopes of the Aurès down to the military posts in the great desert. Passing by Hippone, which has little left to interest us except as the scene of the labours of St. Augustin, the author touched at Rusicada, a place of considerable importance, judging from the numerous remains found there, drawings of the most important being exhibited on the wall. Then passing Saldæ and Iconium with slight reference, he gave a full account of Julia Cæsarea, the capital of Juba II., saying a few words about this remarkable man and all that he did to beautify the city of his choice. The author alluded to Tipasa, and gave a brief description of the few Roman remains to be found further westward. Allusion was made to the marble quarries of Numidia, and a brief account given of the principal marbles of North Africa, still to be obtained in large blocks and at a reasonable price. Returning by Sitifis, in the plains, the author described the principal monuments at Cuiculum, and gave a full account of the remarkable mosaics discovered at Oned Almenia, giving a little insight into the country life and habits of the Romans in the fourth and fifth centuries, and showing, by reference to inscriptions, how much encouragement was given by the emperors to the breeding and training of Numidian horses for the circus at Rome. A few words sufficed for a description of Cirta, the remains of the great Roman Bridge there over the Roumel, and the tombs of Præcilius the silversmith, and of the family of Lollius. Then passing southward by the ruined monument known as Es-Soumah, the author described the principal remains of Tibilis and of the important town of Calama, referring also to the sites of Khamisa and Medauri, which as yet have only been partly explored. Journeying southward a description was given of the remarkable city of Lambæsis, with its forty triumphal arches, its great establishment for an entire military legion, and of the many objects of interest still to be seen in the museum there. Passing by Verecunda, the author gave an account of the ancient Thamugas, at the foot of the Aurès, describing the beauty of its situation and the striking character of some of the monuments, referring to the city as the Pompeii of North Africa. Continuing along the northern slopes of the mountains, the author gave a brief history of the ancient Theveste, its remarkable quadrifrontal arch, its little temple of Minerva and the ruined basilica of Vespasian's time that had been converted in the sixth century into a Christian church. Passing over the Aurès, the author completed his account of the Roman occupation of this part of the country by referring to the military posts far down in the desert. The value of these monumental remains was then considered, the author endeavouring to show that although the triumphal arch, the great Thermæ, the basilica, and even the colonnade of the Roman are now no longer needed, yet the spirit that prompted these works is with us still, evidenced in a measure by our language, our literature, our laws, and even our festivals and calendar, concluding with a remark that, as citizens as well as architects, a study of the works of the Romans was of value as well as of exceeding interest.

Professor T. HAYTER LEWIS proposed a vote of thanks to Mr. Graham for his paper and the magnificent series of drawings with which he illustrated it. Northern Africa, though comparatively so near us, might be said to be an unknown land. No one visited it. There was a fascination about Palestine, Greece, &c., which did not attach to North Africa. They had illustrations, of course, and Bruce had drawn profusely;



but such drawings as Mr. Graham showed that evening were, he thought, without parallel, and of absolute interest to architects, be they who they might. Mr. Lewis then commented on the work in relation to architectural and artistic results, and controverted the idea that the Phœnicians had not practised in architecture and art of a high description, and called to mind that Solomon in his grandest work had called in a Phœnician architect, Hiram, which would hardly have been the case had the Phœnicians not been great artists.

Mr. J. J. WOOD seconded the vote of thanks.

Mr. PERCEVAL said Mr. Graham was right in saying that the North African coast abounded with interesting studies of architecture. Everywhere the most interesting Phœnician remains were found. What had struck him most in that region was the wonderful wealth of marbles, a most marvellous variety of which were found over the whole of Tunisia.

The vote was carried by acclamation.

Mr. GRAHAM, in responding, mentioned that a Belgian company was now working some of the old quarries containing the most exquisite marbles, and it was their intention, he was told, to have a dépôt in London. Consul-General Playfair was going to read a paper on these marbles at the congress of the British Association in Aberdeen.

### EDINBURGH ARCHITECTURAL ASSOCIATION.

THE members of the Edinburgh Architectural Association visited Borthwick and Crichton Castles on Saturday afternoon. While taking shelter at Fushiebridge Railway Station during a thunderstorm, the president (Mr. G. Washington Browne) gave a historical sketch of Borthwick Castle. Subsequently the members proceeded to Borthwick, and Mr. Browne conducted them over the castle, and described the peculiarities of plan, showing how they conduced to the external effect. It was pointed out how the appearance of power and grandeur was caused by the great mass of plain mason-work emphasised by the smallness of the window openings, and how, in spite of the smallness of these openings, the apartments were perfectly lighted. The great hall, although measuring 50 feet by 23 feet with a height of 28 feet, and having no more light than would be afforded by an ordinary oriel window, was yet, owing to the skilful distribution of the window openings, quite sufficiently clear. General regret was expressed at the faulty state of the castle roof, which threatens its durability. The party afterwards proceeded to Crichton Castle, where a paper was read by Mr. John Kinross, giving the signification of the name Crichton, and a history of the different members of the Crichton family, and other families to whom the castle had belonged. The various features of the castle—the great hall, the small kitchen of the old keep, the large kitchen with its double-arched fireplace, the upper kitchen with its access by an external balcony to the upper hall, the elaborate fireplaces, and the rich and unique decoration of the eastern side of the courtyard—were all examined with interest. The excursionists returned to Edinburgh by the late train.

### COSTUME BALL.

THE Royal Institute of Painters in Water-Colours gave on Tuesday night their grand costume ball. It was intended to give a "house-warming" fête of this description as soon as the new galleries in Piccadilly were in order, but last year the plan was prevented by the death of the Duke of Albany. The greatest pains had been expended on making the ball as characteristic and interesting as possible. Every guest was expected to attend in "a costume of a historical period before 1837," which of itself would insure some difference between this and ordinary fancy-dress festivities; but the feature of the evening was the "Masque of Painters," a series of tableaux illustrating the history of art from the time of Phidias to that of Sir Joshua Reynolds. Ancient Athens, Florence, Rome, and Venice, the Germany of Dürer and Holbein, the France of Francis I., the Madrid of Velasquez, the Holland of Franz Hals and Rembrandt, and, lastly, a comprehensive view of the art of England from the days when Vandyck painted the King and Queen to those of Reynolds and Angelica Kauffmann, were represented in successive tableaux; while explanatory verses were recited by Virgil, called up for the occasion from the *Shades* to act as Chorus. The artists who were chiefly responsible for the tableaux were (1) Mr. Sacheverell-Coke, (2) Mr. Walter Crane, (3) Mr. J. D. Linton, (4) Mr. Caton Woodville, (5) Mr. Seymour Lucas, (6) Mr. T. W. Wilson and Mr. E. A. Abbey, (7) Mr. Seymour Lucas and Mr. Charles Green. The verses were written by Mr. Edmund Gosse, in a manner pleasantly recalling the masque-writers of the seventeenth century, and Virgil was personated by Mr. J.

Forbes-Robertson. About ten the tableaux began. The curtain rose to discover an altar, beside which Virgil stood in scarlet robe with a crown of laurel on his head and a staff in his hand. He described how his sacred slumbers had been disturbed by the blare of trumpets, and how he had come forth by Athene's will to explain the pageantry which was to unfold the "pedigree of art." First were to come some "shadowy names from fair historic Greece;" and accordingly, when the curtain had fallen and risen again, there was revealed part of a street in Athens, with scaffolding raised against a building, where, among loose blocks of marble in the foreground, Pericles (Mr. John Fulleylove) was consulting Ictinus, the architect (Mr. H. M. Paget), and Phidias, the sculptor (Mr. John Nettleship), respecting the details of the Parthenon. Zeuxis (Mr. John Scott) was seen on the left hand in converse with some Athenian ladies. This scene over, Virgil appeared again, and described how ages had passed, and how there stood before him the new glories of Italy, of Florence, Rome, and Venice.

No names so great as these the ages know—  
Da Vinci, Raphael, Michel Angelo;  
All skill, all grace, all power of hand and heart,  
These mighty three combined 't enrich their art;  
And till the tired world sinks within the sea,  
No fourth shall rise to breast the immortal three.

This was Mr. Walter Crane's tableau, and he had ingeniously divided the inner scene into three arched compartments, so as to display, as in a triptych, the arts of the three great Italian cities. In the centre, in a Florentine garden, behind which rose the tower of the Palazzo Vecchio, there appeared Dante and Beatrice, Petrarch and Laura, Cimabue (Mr. Walter Crane), with Giotto as a shepherd boy, and Niccolò Pisano (Mr. W. A. S. Benson), with various ladies of Florence, chief among whom was Boccaccio's Fiametta (Miss Stillman). In the right hand compartment was a terrace in the gardens of the Vatican, where Michel Angelo (Mr. John O'Connor) was showing to Pope Julius II. (Mr. S. Sidley) an architectural design. Cardinals and priests were in waiting on His Holiness, and Raphael (Mr. E. R. Hughes), at the foot of the steps in front, looked upon his great rival. On the left was a glimpse of Venice from a balcony of the Ducal Palace. A group of gentlemen and ladies of the Giorgione period were standing there, and there were also Giovanni Bellini (Mr. Lewis Jarvis), Titian (Mr. J. H. Mole), and Paul Veronese (Mr. J. D. Linton).

The next tableau was Mr. Linton's arrangement of the representative characters of the age of Dürer and Holbein. It displayed the interior of a studio in which Albrecht Dürer (Mr. E. J. Gregory, A.R.A.) was explaining to the Emperor Maximilian (Mr. R. J. Stock) his print called the *Triumph* of that potentate. In the group supporting the Emperor were Holbein (Mr. H. Stevens), Peter Visscher (Mr. James Orrock), and Lucas Cranach (Mr. E. M. Wimperis). Then the audience was invited to pass to France, to dwell for a moment on the period when, as the historian of the French Renaissance has expressed it, "the shattered remains of Italian civilisation might be collected, and Paris might receive the men whom Italy could no longer employ;" when France, having sucked the life-blood of Italy, was to derive new life from the death of her teacher. Virgil here recited these lines:—

To that pale Court where passion burned in flame,  
With silver gifts and bronze, Cellini came;  
There, chained to pleasure, art and beauty lay,  
And all the Pleiad with their crowns of bay;  
At Francis' feet the mighty Potter laid  
The coloured fish and snakes and weeds he made,  
And round them, wondering, those French faces drew  
That Clouet's brush and Goujon's chisel knew.

The scene, designed by Mr. Caton Woodville, represented a terrace in front of the Palace of Fontainebleau, Francis I. (Major Wallace Carpenter) receiving Benvenuto Cellini (Captain A. Hutton), who was taking specimens of gold and silver plate from his pupils, Paolo Romano (Mr. F. Verrall) and Ascanio da Tagliacozzo (Hon. Duff Tollemache), and presenting them to the king.

Then followed the "starv'd and short" day of painting in Spain. The tableau represented the studio of Velasquez (Mr. Cafe), in Madrid, on the occasion of a Royal visit. The master was pointing out to King Philip IV. (Mr. Haynes Williams) and Queen Mariana (Miss Day) his picture of *Las Meninas*, which stood upon an easel, and other Dons and Doñas, painters, and Cardinals stood around. Then came Holland, and

The Dutch, when wealth and wisdom clipped their wings,  
First learned the loveliness of homely things,  
But looked beyond, for Rembrandt trained their eyes,  
And marked the changes of their northern skies;  
Then silvery Terburg came, and golden Cuyp,  
And each flushed votary of the pot and pipe.

The scene represented an old Dutch house and garden in Haarlem, once the home of Franz Hals and of Jan van der



Meer. On the right were a group drinking and talking around a table, Rembrandt lifting his glass to Cuyp; Ostade and Teniers watching a game of bowls. Then, after more verses from Virgil, came the elaborate tableau of Mr. Seymour Lucas and Mr. Charles Green, intended to represent the history of art in England for more than a hundred years. A hemicycle, in pyramidal shape, rose between columns. At the summit stood Charles I. (Mr. Arthur Lucas) in hunting costume, and Queen Henrietta Maria (Miss Florence Cotton) sat just below, watching Vandyck (Mr. Alfred Mason) painting the portrait of the king. Behind the queen stood Prince Rupert (Mr. Arthur Hacker), and, on successive steps, broadening to the base, were Hogarth (Mr. C. M. Barker), standing a little aloof from the others, Sir Joshua Reynolds (Mr. R. R. Collins), conversing with Angelica Kauffmann (Miss Alma-Tadema), and Gainsborough (Mr. W. S. Stacey).

After Virgil had declaimed a few more graceful verses, the characters filed off the stage two and two, and passed up into the picture galleries, the Royal party and the other guests following, and remaining there till the hall was cleared, when dancing commenced.

## THE CRYSTAL PALACE PICTURE GALLERY.

THE whole of the pictures in the art gallery at the Crystal Palace having been sold at the close of the International Exhibition held there last year, the directors have converted the one long gallery into a range of conveniently sized rooms, the cross divisions, of course, affording much additional wall space. In these well-lighted galleries there have been arranged, under conditions on the whole favourable to the works exhibited, a collection of oil-paintings and water-colours, of which a considerable number are pictures for which space could not be found, although their merits would in many cases have entitled them to a place, at the Royal Academy or the Royal Institute of Painters. Gallery I. is filled with works, 127 in number, which may be considered as an overflow from those two exhibitions. Gallery II. contains, among other water-colours that will attract notice, two by Mr. John Absolon, R.A., the very interesting original studies for Mr. G. A. Storey's *Blue Girls of Canterbury*, two architectural studies by Mr. Macquoid, and a pleasing portrait by Miss Catherine J. Atkins. In Gallery III. are about eighty oil-paintings from the Academy, of which two by Mr. Lester Sutcliffe, a warm-toned autumn scene and a well-composed seascape with rocky foreground; a landscape with a group of cattle by a reedy pool, sent by Mr. Marmaduke Langdale; a sunset after storm, somewhat suggestive of Danby, by Mr. G. A. Williams; and a mountain loch, by Mr. C. Gordon Stuart, must be mentioned. The next room also contains oil-paintings, of which some have been hung at the Academy, Mr. Stanley Berkeley's *Prince Rupert* being one of these. Two sea pieces by Mr. Calcott are good specimens of his broad and nervous style. Gallery V. is given up to architectural drawings and works by students of the Crystal Palace School of Art. The galleries have been adorned with statuary and groups of foliage plants; and, as the important matter of providing seats for visitors has not been overlooked, the new picture gallery may be expected to prove a popular addition to the attractions of the Palace, especially as no extra charge is to be made for admission.

## LIVERPOOL ARCHITECTURAL AND ENGINEERING SOCIETIES.

A JOINT meeting of these Societies was held on Wednesday, May 13, at the rooms of the Architectural Society, 9 Cook Street, Liverpool, when a paper by Mr. W. Goldstraw, on "Science and Art in Connection with Building," was read by the author. The paper referred to the connection of science with building as "the application of exact knowledge of the nature of materials, and of the principles of mechanics to the planning and construction of buildings with a view to their safe and convenient use," whilst the connection of art with buildings was said to be "the exercise of taste and skill in both design and execution for the purpose of producing a beautiful effect in the structure." Thus regarded, science and art, or utility and beauty, ought to be amalgamated in building work without neutralising each other, and the balancing of the two was the problem which every designer of buildings should endeavour to solve. For examples of this happy union, reference was made to the dome of St. Paul's, the steeple of Bow Church, the Vienna Exhibition, and the arched vault over St. George's Hall. As instances where science had excluded art, mention was made of the Britannia Tubular Bridge and the new Tay Bridge. The man whose chief business it is to apply science to buildings is an engineer, but the architect must cultivate science and art together. The distinction between the two professions was

described as very much an arbitrary one. Neither engineers nor architects have any exclusive right to the work of designing buildings and such like structures. There is no line of demarcation between the two professions. But there is a bond of union in the nature of their common pursuits.

## ANCIENT ROMAN ROAD.

THE fact that no trough-stone has been hitherto met with in any undoubted Roman road in the country can no longer be maintained, owing, says a correspondent, to a discovery which has been made by Mr. Edward Kirk, of Pendleton, in a portion of the Roman road which united Chester and Manchester. The site of these remains is in Delamere Forest, and near to the ruins of the Castle of Eddisbury. The road at this point was through what has been a natural mound, and the course had to be excavated through the red sandstone. The road ascends in an easterly direction a gradient estimated at about one in fifteen. The earth and rock have been cleared to the depth of 12 feet or 15 feet, and to the width of 35 feet. Up the centre of this 35 feet roadway is cut through the solid rock, with a trough in the middle resembling the one on Blackstone Edge in its main features, being in one measured section 22 inches wide at the top and sloping to 15 inches at the bottom. On each side of this trough has been cut a rut for the wheels of vehicles to pass along. These are 11 inches wide at the top and 7 inches at the bottom, one being a foot deep. The sides of the ruts next the trough are perpendicular; the outer sides form a gradual slope. The rigid straightness of these ruts and the perfect evenness of the slopes, as well as tool marks, show that they have been hewn out of the rock, and are not the result of wheel wear. Moreover, in one portion of the roadway it is sunk deep into the rock, having sloping sides and giving a width of 6 feet 3 inches. Taking 3 inches from the inner side of each of the ruts, which is about the centre, gives a gauge of 4 feet 6 inches, and is the same gauge as that traced in the roadway on Blackstone Edge. The length of the cutting through the rock is 207 feet. The roadway is traceable further eastward, moving on rectangular lines, and in the space of half a mile several angles are shown, one of these being nearly midway in the rock cutting. A portion of the road east of the rock cutting is a sunken way followed by an agger raised a few feet to carry it over a low place. In another portion there is a section of probably 400 yards in length raised on an embankment estimated at one point at 9 feet high. This measures from fosse to fosse 67 feet 6 inches, and the agger 31 feet.

On Saturday afternoon the members of the Lancashire and Cheshire Antiquarian Society, under the leadership of Mr. E. Kirk, visited Delamere for the purpose of inspecting the remains. Mr. Kirk said he was not prepared to read a paper, as his investigations were not yet complete. Mr. W. Thompson Watkin had visited the place with him, and they had together given a closer examination of the road than had been possible for the members that afternoon. Mr. Watkin fully concurred in his view that the remains were Roman. Dr. Colley March said what they had seen was highly interesting. The castle, they knew, had been held by the Saxons, and he thought it was clear also by the Celts, and he believed by the Romans as well. The other remains were clearly of high antiquity. The road was not, apparently, made for pack horses, but for wheeled vehicles. The ruts did not look as if made by Saxon wheels, which had broad tyres, but by narrow wheels shod with iron, with a gauge similar to the Roman gauge. The traffic had apparently been heavy, and had extended over a considerable period of time, and he was therefore disposed to refer to Roman times for an explanation. With regard to the trough, he was not prepared to say that it was the same as that on Blackstone Edge; and the ruts, he thought, might possibly have been worn by heavy traffic, and not cut. It was premature, however, to come to conclusions on some points. The Rev. E. F. Letts thought much rested on conjecture. He could not understand why the Romans should make four or five angles within so short a space. Supposing this to have been a road two hundred or three hundred years ago, he asked would not the tumbrels be sufficient to form the ruts? With regard to the ridges, they seemed to him to be nothing more than natural formations, and different colours of soil might be found in the same field. He advised caution before coming to conclusions. Mr. Kirk, in reply, said that differences of opinion were to be expected. None of them would question Mr. Watkin's ability in Roman matters. He had had a communication from Mr. Watkin that morning, in which he said:—"Thinking over the forest road, I have gradually come to the conclusion, from its low position (for the short distance), that it was first a British trackway, afterwards adopted by the Romans." Mr. Kirk said that what they had seen was contrary to all his experience in natural formations, and concluded by proposing that the society should communicate with the Commissioners of Woods and Forests—



the remains being on land belonging to the Crown—and ask permission to excavate the rocky way through “The Urchin’s Kitchen.” They should also ask for the future protection of the road.

### GLASGOW ARCHITECTURAL ASSOCIATION.

ON Saturday afternoon the members visited some of the buildings of architectural interest and importance in Edinburgh—the new Conservative Club, the Medical Schools (of both of which Dr. Rowand Anderson was the architect), and then the Drumsheugh Baths. These last, for colour and novelty of design, were specially admired. Messrs. Burnet & Son, Glasgow, were the architects. After dining together, the party visited the Royal Scottish Academy Exhibition.

### MOHAMMEDAN ARCHITECTURE.

A MEETING of the Edinburgh Architectural Association was held on Monday evening in the Professional Hall, George Street, Edinburgh, Mr. G. Washington Browne in the chair. Dr. James Burgess, F.R.G.S., Government Archaeological Surveyor for Western India, described the Mohammedan architecture of Gujerat, which he illustrated by a numerous series of drawings and photographs, showing the architecture of Gujerat, under the dynasty of the Ahmad Shahi kings, from 1397 to the middle of the sixteenth century. He drew particular attention to the mosque, which, he said, originated very simply. It was formed of a wall with recesses, in which the Mohammedan knelt or bowed, always directing his face towards Mecca. The roof was added to protect the worshipper from the sun and rain, and the marks on the wall before which he knelt were afterwards developed into richly ornamented recesses called miherabs. Turrets were afterwards built, and these, with the miherabs, were the features which were the most highly-ornamented of the Gujerat mosque. The lecturer next directed attention to the sluices for filling artificial tanks or lakes, which were ornamented in a style of surpassing richness. Examples were given of step-wells, with long descending stairs and galleries, finely sculptured and of great interest from an architectural point of view. With Mr. Ruskin and Mr. Poynter, they might, he said, regret that the time had passed when every workman was also an artist, and the dead uniformity of machine work was almost undreamt of. They could not bring back that time, but they might, like the Americans, keep it in remembrance by copying their designs in our furniture and wainscotings. Dr. Burgess, who was cordially thanked for his lecture, has consented to exhibit his collection of high-class drawings to the public of Edinburgh in the course of a few weeks.

## Bygones.

“Antiquity after a time has the grace of novelty.”—HAZLITT.

### ADDISON IN ITALY.

IN 1699, Joseph Addison having obtained a pension from the Whig Ministers for the purpose of enabling him to travel, left England for Italy. After spending over a year in France in order to acquire a sufficient knowledge of the language to qualify him for diplomatic employment, he set out from Marseilles to Genoa in a small tartane. He encountered danger in one of the Mediterranean squalls, and was compelled to land at Monaco. The voyagers tried to creep along the shore in a little boat, but the roughness of the sea made them land at Savona. From thence they travelled over very rugged mountains and precipices to Genoa. The city was at that time ruled by the Doge and nobles, whose names were recorded in the golden book. Addison gives the following description of the city as it appeared in the beginning of the eighteenth century:—

“There are a great many beautiful palaces standing along the seashore on both sides of Genoa, which make the town appear much longer than it is to those that sail by it. The city itself makes the noblest show of any in the world. The houses are most of them painted on the outside, so that they look extremely gay and lively; besides that they are esteemed the highest in Europe, and stand very thick together. The New Street is a double range of palaces from one end to the other, built with an excellent fancy and fit for the greatest princes to inhabit. I cannot, however, be reconciled to their manner of painting several of the Genoese houses. Figures, perspectives,

or pieces of history, are certainly very ornamental as they are drawn on many of the walls, that would otherwise look too naked and uniform without them. But, instead of these, one often sees the front of a palace covered with painted pillars of different orders. If these were so many true columns of marble set in their proper architecture, they would certainly very much adorn the places where they stand; but as they are now, they only show us that there is something wanting, and that the palace, which without these counterfeit pillars would be beautiful in its kind, might have been more perfect by the addition of such as are real. The front of the Villa Imperiale at a mile distance from Genoa, without anything of this paint upon it, consists of a Doric and Corinthian row of pillars, and is much the handsomest of any I there saw. The Duke of Doria’s palace has the best outside of any in Genoa, as that of Durazzo is the best furnished within. There is one room in the first that is hung with tapestry, in which are wrought the figures of the great persons that the family has produced; as perhaps there is no house in Europe that can show a longer line of heroes that have still acted for the good of their country. Andrew Doria has a statue erected to him at the entrance of the Doge’s Palace, with the glorious title of Deliverer of the Commonwealth; and one of his family another, that calls him its preserver. In the Doge’s Palace are the rooms where the great and little council, with the two colleges, hold their assemblies; but as the state of Genoa is very poor, though several of its members are extremely rich, so one may observe infinitely more splendour and magnificence in particular persons’ houses than in those that belong to the public. But we find in most of the states of Europe that the people show the greatest marks of poverty where the governors live in the greatest magnificence. The churches are very fine, particularly that of the Annunciation, which looks wonderfully beautiful in the inside, all but one corner of it being covered with statues, gilding and paint.”

From Genoa, with its sea without fish, land without trees, and men without faith, Addison travelled by road to Milan, stopping on his way at Pavia. At that time everything Gothic was held in disesteem, and, as will be seen, the traveller was not impressed by the cathedral:—

“I could not stay long in Milan without going to see the great church that I had heard so much of, but was never more deceived in my expectation than at my first entering; for the front, which was all I had seen of the outside, is not half-finished, and the inside is so smutted with dust and the smoke of lamps that neither the marble nor the silver nor brasswork show themselves to an advantage. This vast Gothic pile of building is all of marble, except the roof, which would have been of the same matter with the rest had not its weight rendered it improper for that part of the building. But for the reason I have just now mentioned, the outside of the church looks much whiter and fresher than the inside; for where the marble is so often washed with rains it preserves itself more beautiful and unsullied than in those parts that are not at all exposed to the weather. That side of the church, indeed, which faces the Tramontane wind is much more unsightly than the rest, by reason of the dust and smoke that are driven against it. This profusion of marble, though astonishing to strangers, is not very wonderful in a country that has so many veins of it within its bowels. But though the stones are cheap, the working of them is very expensive. It is generally said there are eleven thousand statues about the church; but they reckon into the account every particular figure in the history pieces and several little images which make up the equipage of those that are larger. There are, indeed, a great multitude of such as are bigger than the life. I reckoned about two hundred and fifty on the outside of the church, though I only told three sides of it, and these are not half so thick set as they intend them. The statues are all of marble, and generally well cut; but the most valuable one they have is a *St. Bartholomew*, new-flayed, with his skin hanging over his shoulders. It is esteemed worth its weight in gold. They have inscribed this verse on the pedestal, to show the value they have for the workman:—

‘Non me Praxiteles, sed Marcus finxit Agrati.’

(‘Lest at the sculptor doubtfully you guess,  
’Tis Marc Agrati, not Praxiteles.’)

Addison’s route was by Verona and Padua to Venice. He gives the following description of the Queen of the Adriatic:—

“Venice has several particulars which are not to be found in other cities, and is therefore very entertaining to a traveller. It looks at a distance like a great town half floated by a deluge. There are canals everywhere crossing it, so that one may go to most houses either by land or water. This is a very great convenience to the inhabitants, for a gondola with two oars at Venice is as magnificent as a coach and six horses with a large equipage in another country; besides that it makes all other carriages extremely cheap. The streets are generally paved with brick or freestone, and always kept very neat, for there is no



carriage, not so much as a chair, that passes through them. There is an innumerable multitude of very handsome bridges, all of a single arch, and without any fence on either side, which would be a great inconvenience to a city less sober than Venice. One would indeed wonder that drinking is so little in vogue among the Venetians, who are in a moist air and a moderate climate, and have no such diversions as bowling, hunting, walking, riding, and the like exercises to employ them without doors. But as the nobles are not to converse too much with strangers they are in no danger of learning it, and they are generally too distrustful of one another for the freedoms that are used in such kind of conversations. There are many noble palaces in Venice. Their furniture is not commonly very rich, if we except the pictures, which are here in greater plenty than in any other place in Europe, from the hands of the best masters of the Lombard School, as Titian, Paul Veronese, and Tintoret. The last of these is in greater esteem at Venice than in other parts of Italy. The rooms are generally hung with gilt leather, which they cover on extraordinary occasions with tapestry and hangings of greater value. The flooring is a kind of red plaster made of brick, ground to powder, and afterwards worked into mortar. It is rubbed with oil, and makes a smooth, shining, and beautiful surface."

(To be continued.)

### COAL TAR COLOURS.

AT the meeting of the Edinburgh Association of Science and Art on Monday night, Mr. John Ritchie, the president, in the chair, Mr. W. Ivison Macadam delivered a lecture on "Recent Advances in the Chemistry of the Coal Tar Colours." After referring to the proportions of naphthas which might be expected from coal, and to the methods by which they could be converted into the aniline series of colours, he dealt with the carbolic, naphtholine, and alizarine series. In conclusion, he explained the preparation of artificial indigo, which was the latest addition to the series, and drew attention to the chemical constitution of the various classes, pointing out the close resemblance they bore to one another. The lecture was illustrated by experiments, and at the close Mr. Macadam was awarded a hearty vote of thanks.

### CLAIM FOR EXTRAS.

AT the meeting of the Board of Guardians for the City of London Union on May 12, on the subject of the claims of Mr. Holland, the builder, in connection with the alterations at Homerton, Mr. Young said he had received a letter from Mr. Holland, and he was strongly of opinion that the matter should be settled, and Mr. Holland's account paid.

The Clerk read a letter from Mr. J. W. Blashill, the architect appointed by the Board to investigate and report on the subject, stating that he was proceeding as rapidly as possible, and that when the members of the Board were aware of the circumstances under which the report had been delayed they would think the delay justifiable.

Mr. Cox thought Mr. Blashill ought to give them a date when they might expect his report. He ought to be written to and asked to furnish the Board with this explanation. He had had the matter in hand nearly three months, and he would move that he be written to for the information, a motion which was adopted.

The Clerk read a letter from Mr. Judge, the architect of the alterations, calling attention to the balance of his account still outstanding, 219*l.*, and stating that unless the amount be paid within ten days from date he must very reluctantly place the matter in the hands of his solicitor for its recovery, also notifying that he shall claim interest at the rate of 5 per cent. per annum.

Mr. Tattersall asserted that Mr. Judge had been paid everything under the contract, and he was simply going to move, without a word of comment, this resolution:—"That this Board cannot recognise Mr. Judge's claim for commission until it is decided whether anything is due to the contractor for extras, and until it is ascertained what counter-claim the Guardians have against Mr. Judge."

The Clerk said that Mr. Judge sent in an account for 428*l.* 9*s.* There was a small item, 3*l.* 3*s.*, charged for attendance and preparing plans; then attending committees, 4*l.* 4*s.*; 349*l.* was the charge upon 6,993*l.* Then there were two small items of one guinea each; then various attendances upon the committee, and charges for surveying, &c., amounting to 70*l.*; making a total of 429*l.* 9*s.* Mr. Judge had received on October 10 109*l.* 9*s.*, and on February 28 100*l.*, making 209*l.* 9*s.*, which left 219*l.* due to him.

Mr. Tattersall had always understood that Mr. Judge had been paid all that was due to him on the contract; if that was

not the case the Board would be very willing to pay him. The question that the Board disputed was as to the extras. If there was anything due to Mr. Judge under the original contract, let him be paid.

Mr. W. H. Wagstaff moved that the letter be referred to the Homerton Committee, for them to inquire what was due to Mr. Judge, and that he be paid.

The motion was carried.

The Clerk read a letter from Mr. Holland, in which the following paragraphs appeared:—"Having read the remarks made by the members of your committee, I have taken the liberty of introducing a few questions (copy enclosed), that the committee may reply. It will then give the Board some idea of the extent of their investigations in this case, the work having been completed on July 29, 1884. In a similar case to this, another Board having been compelled to pay the builders' account, also a considerable sum of legal expenses, is, I hope, a sufficient apology for my bringing this case before you."

At the meeting on Tuesday, the 19th inst., the Clerk read the following letter from Mr. Blashill:—"10 Old Jewry Chambers, May 18, 1885. Dear Sir,—Homerton Workhouse. I am in receipt of your letter of the 13th inst., in which you ask me to let you know, for the information of the Guardians, at what date I shall send in my report. In naming a time I think it best to inform the Board that the documents handed to me by the committee relate to a claim by the contractor for additional works to the amount of 5,725*l.* 10*s.* 3*d.*, with an allowance for works omitted of 2,937*l.* 1*s.* 8*d.* The whole of these additions and omissions, amounting as they do to 8,662*l.* 11*s.* 11*d.*, have to be dealt with by me before I can make my report. The committee have handed to me, as the only statement presented to them, a bill in which these additions and omissions are stated under certain general heads, and in lump sums varying from 6*l.* 3*s.* 7*d.* to 1,638*l.* 2*s.* 2*d.*, no information having been given as to the details which make up those lump sums. I am employed to ascertain in the fairest way possible whether the claim made by the contractor is a proper one, and on my appointment becoming known to Mr. Holland he instructed a surveyor to see me and give me all the details of the claim, and all facilities for making my report. This offer has been repeated on subsequent occasions, but I have never received any such information, and I am now proceeding with this part of the investigation by other means. I have no doubt that I shall be able to complete my report within five weeks from this date.—(Signed) J. W. BLASHILL."

This letter, together with one from Mr. Holland, was ordered to lie on the table.

### PROTECTION OF WOODEN BUILDINGS.

THE following is an American recipe for rendering wood factory buildings more fire-resisting. The method consists in filling the spaces between the studding with a grout made of sand, lime, and a large proportion of sawdust. Mixed with sufficient water to flow slowly, it becomes quite hard, is a poor conductor of heat, and will not ignite although it is charred by exposure to an intense fire. This applies to a building already constructed, where it would be a difficult task to remove the sheathing, or lath and plaster already on the inside walls. Where the studding is already exposed on the inner side, the space is frequently filled with brick, masonry, or large tiles made for such purposes. A new material made for such purposes in America is called terra-cotta lumber, and is composed of top clay, which overlies the firebrick clay, mixed with equal or double quantities of sawdust. Every vestige of the sawdust disappears in firing, leaving the tiles very porous. Its use is not limited to filling walls, but it is applied to other purposes of construction where refractory materials are desired, as for short joists between iron floor beams, roofs, coverings to iron columns and beams, sheathings for internally fired boilers, and steam pipes. Small cylinders of this material are arranged with suitable coverings, filled with petroleum and used for torches. Nails and screws can be driven into it, and it can be cut to dimension with edge tools as desired.

### ARCHÆOLOGY.

**Lancashire and Cheshire Antiquarian Society.**—The members of this society on Tuesday evening visited Reddish. The expedition was conducted by the Rev. Addison Crofton, vicar of St. Elizabeth's, and the places of interest visited were the Nico Ditch, the old road near Pink Bank Plantation, and Peel Moat in Heaton Norris. The first of these, Nico Ditch, forms the parish boundary between Gorton and Reddish, and extends in its full length from Ashton Moss to Ouse Moss. It is said to have been formed in a single night by the Saxons to repel a threatened invasion by the Danes. The old road is merely a remnant left standing alone in the midst of a wide expanse of pasture land. It still shows some signs of pavement,



and is bordered by the dead and weird-looking remains of a once leafy avenue of oaks. It is generally almost impassable from the swampy nature of the ground, and the almost abysmal ruts and holes, but on the occasion of the society's visit the comparatively dry weather had made travelling pleasant and easy. The long length of Pink Bank Lane offered nothing of great interest; but Peel Moat, which was reached in due time, was certainly worthy of a visit, and a short address from the conductor concerning the supposed origin of the name and use of the place occupied a few minutes before the members proceeded to walk round the square enclosure and make their observations on this curious remnant of the past.



#### The Ashpitol Prize.

SIR,—A letter from "A. B. C." in your last issue, calls attention to the fact that the Ashpitol Prize has been withheld for two years: further, that the prize was instituted about 1873. Now the first voluntary architectural examination took place in 1862. Would it not be a gracious act on the part of the Council of the Institute to make the reward retrospective, and to give the two prizes not awarded to those candidates who passed the most successfully in past years? A precedent for this would be found in the case of the Pugin students, who this year had medals awarded to them going back to the first recipient of the prize. X. Y. Z.

### CHURCH BUILDING AND RESTORATION.

**Pembridge.**—A Congregational chapel built in place of the old and dilapidated structure has been opened. It was built by Mr. C. Edwards, contractor, Leominster, from the plans of Mr. Percival Vernon, of Hereford.

**Carlton.**—The church of St. Paul erected at Carlton has been opened. Only a portion of the church has been built, being chancel and part of nave. The style is Lombardic, and the materials used are red brick and London grey stocks, with terra-cotta enrichments from the Hathern Terra-cotta Company, Loughborough. Adjoining the church a vicarage has been built in red brick, the contractor being Mr. Brown, of Stanley Common, near Derby. The builders of the church were Messrs. Bradley & Barber, of Nottingham. The church and rectory have been built from designs by Mr. W. A. Coombs, architect, 31 Charing Cross, London.

**Walton.**—A church at Walton, near Warrington, built at the cost of Sir G. Greenall, has been opened. The style of the building is Gothic. The sole contractor was Mr. R. Fairhurst, of Higher Whitley, Northwich.

**Keystone.**—The porch of the church at Keystone has been restored. The work has been carried out by Messrs. W. Streather & Sons, of Raunds.

### SCHOOL BUILDINGS.

**West Vale.**—A Sunday-school erected in connection with St. John's Church has been opened. The building is of local stone, in Gothic style, planned by Mr. W. H. D. Horsfall, of Halifax. The contractors were—mason, Mr. Thomas Pickles, Midgley; joiner, &c., Messrs. C. & W. Whiteley, Rishworth; slaters and plasterers, Messrs. Wadsworth & Sons, Greetland; plumbers and glaziers, also heating apparatus, by Messrs. S. & W. H. Jagger, Elland; painters, Messrs. E. Whitehead & Co., Sowerby Bridge.

**Huddersfield.**—Extensions have been carried out at the Lockwood Board School. The new school will accommodate 460 children, and provision is being made for a cookery-room for fifty girls. The style of architecture adopted is Early Gothic, and the materials for the exterior are Elland edgestone, pitch-faced with dressings of Crosland Hill stone. The total amount of the contracts entered into is 5,411*l.* 10*s.*, which includes various works in connection with the school buildings, providing two large covered play-sheds for the infants, altering and enlarging the offices, and concreting the play-grounds. The designs have been prepared by Messrs. Henman & Harrison, architects, London.

**Sunderland.**—The foundation-stone of Sunday schools, to be built in connection with St. Mark's, Millfield, has been laid. The schools are designed in Gothic style by Mr. John Hudson, of High Street, Sunderland, and the contract has been let to Mr. Robert Hudson, jun., for 1,000*l.* The schools are to

accommodate over 500 scholars, and will be built of brick, relieved by stone corbels, and will, when completed, be 90 feet long by 50 feet wide, with an entrance porch 15 feet by 12, whilst the full height of the building will be 36 feet. The exterior will show four principal gables, with three-light lancet windows within a Gothic arch, the remaining portions showing smaller lancet windows. The interior of the building will consist of two class-rooms on each side, each 12 feet by 9 feet, arranged to be divided off by revolving shutters, whilst a room 26 feet by 22 feet can be also shut off in the same way when small meetings are held.

### GENERAL.

**The Royal Scottish Academy** closed on Saturday last after being open during three months. The attendance of visitors and the amount derived from sales of pictures has been on a par with that of previous years.

**The Annual Conversazione of the Society of Arts** will be held at the Inventions Exhibition on Friday, July 3.

**The Testimonial** subscribed for last year will be presented to the Lord Mayor on Thursday, the 28th inst. The presentation includes a portrait by Mr. F. Holl, R.A.

**Mr. Watts, R.A.**, is at work on a half-length portrait of Miss Mary Anderson.

**The Private View** of the Exhibition of the Society of Painter-Etchers takes place to-day (Saturday).

**The Assyrian Room** at the British Museum has been enriched by a collection of engraved stones from Assyria and Babylonia. Besides inscriptions are various representations of animals, &c., and such groups as that of *Dagon and a Lotus*, a man carrying a basket, a man seizing an antelope by the hind leg, and a goat before a small tree over which the sun shines.

**The Annual Excursion** of the Edinburgh Architectural Association will take place on Saturday, the 30th inst., under the leadership of Mr. Hippolyte J. Blane. The visit will be made to Aberdour and Inchcolm.

**Mr. Thomas Blashill** read a paper before the members of the Archæological Association on Wednesday evening, on "The Cistercian Abbey of Dore."

**A Cottage Hospital** is to be erected at Bideford, from the designs of Mr. Wilson, architect.

**A Corn Exchange**, with Public Baths and Butter Market, are to be erected at Beverley, and competitive designs will be invited for the buildings by the Town Council.

**Sir J. Coode, C.E.**, has selected a site at Trincomalee for a dry dock, which is to be constructed forthwith for the Government.

**The Chancel** of the cathedral which is being erected at Honolulu was ready for roofing, according to advices dating from the middle of April.

**Mr. John Shaw**, of the College, Derby, and Mr. J. R. Naylor, Derby, have been appointed jointly with Mr. F. J. Robinson, Derby, surveyors for the diocese under the Ecclesiastical Dilapidations Act.

**By the Death of Mrs. Chambers**, the widow of the late Dr. W. Chambers, of Edinburgh, on Saturday last, a sum of 5,000*l.*, bequeathed by her late husband to the Watt Institution and School of Arts, under life-rented conditions, will, it is understood, now become payable.

**The Yarmouth Town Council** have decided on obtaining the services of an engineer to advise them as to the stability of the Town Hall.

**Mr. Stevenson's** design for the erection of the chemical laboratory at Cambridge has been approved of by the University authorities.

**The Committee** having in hand the work of restoring St. Michael's Church, Coventry, have provisionally accepted a tender for the execution of nearly the whole of the restoration, at a cost of 31,163*l.*

**A Memorial** has been presented to the Secretary of State for India begging him to direct that the work of deepening the inner harbour at Aden, so as to enable vessels of deep draught to enter, remain afloat, and leave at all states of the tide, shall be begun as soon as possible.

**The New Infirmary** of the Croydon Union was opened on Saturday. The designs are for six pavilions, with 643 beds; but up to the present only four pavilions, with 435 beds, have been erected, the cost of building being 101,000*l.*

**The Ladies' Sanitary Association** of Wolverhampton held their annual meeting on Friday last week in the Town Hall, Wolverhampton.

**An Inland Navigation Congress** is to be opened in Brussels on the 24th inst. More than five hundred persons have already announced their intention to attend. The programme includes consideration of canals in general, maritime canals, non-maritime canals, and technical subjects. Visits to the Belgian maritime canals are projected.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MAY 23, 1885.

## TENDERS, ETC.

*As great disappointment is frequently expressed at the non-appearance of Contracts Open, Tenders, &c., it is particularly requested that information of this description be forwarded to the Office, 175 Strand, London, W.C., not later than 5 p.m. on Thursdays.*

*Correspondents, when writing to notify an extension of time, or an alteration of the date of sending in Competitions or Contracts, are requested in their letter of advice to write at the head of the required change—"Contract Reporter to THE ARCHITECT."*

## NATIONAL AGRICULTURAL HALL.

TENDERS have just been sent in for the National Agricultural Hall, South Kensington. The quantities were taken out by Messrs. Franklin & Andrews, and the work is to be executed under the superintendence of the architect to the Company, Mr. Henry E. Coe. The American and also the Colonial Exhibitions are to be held in the new building in the spring of next year. The full list of tenders will be found on page 5.

## AMERICAN EXHIBITION, LONDON, 1886.

A SITE for the proposed exhibition has been chosen at Earl's Court. The selected site is but a short distance from South Kensington, and situated in the best part of London. The property to be occupied by the exhibition covers about twenty acres, and has railway advantages in advance of any exhibition ever held in London. The station for the District Railway will be in the exhibition grounds, and another one will be at West Brompton, a few steps from the entrance to the main building. Every railway in Great Britain will have facilities for immediate and direct connection with the exhibition building. As the two great exhibitions—the Colonial and the American—will thus be in almost direct contiguity, millions of visitors will be saved the trouble and expense of cab fare from one part of London to another. The delay in the selection of a site is additional evidence of the prudence of the managers, who have had to withstand much pressure in favour of the Crystal Palace, Alexandra Palace, and other locations. There can be no question but that the present site selected has advantages over any other to be had in London.

## BIRMINGHAM BUILDERS' ASSOCIATION.

A MEETING of the Birmingham Builders' Association was held at the Grand Hotel, Birmingham, last week. Mr. John Bowen presided, and there were also present Messrs. A. S. Smith,

W. Sapcote, C. H. Barnsley, C. W. Barker, T. Surman, J. Jeffery, W. J. Whittall, Councillor Loughton, E. J. Bigwood, secretary, &c., &c. The rules of the Association were revised, adopted, and ordered to be printed. The President, in moving the adoption of the schedule of day-work prices, as revised by the committee of the Association, said that it had been the endeavour of the committee to make the prices fair and just between employer and employed, and expressed a hope that this fact would be recognised by all parties, and that the revised list might be taken as the standard prices of the trade throughout the town. The schedule of prices was adopted, and ordered to be circulated amongst the architects and surveyors of the town.

## CONTRACTS OPEN.

ALNWICK.—May 23.—For Building Bridge over Tyelaw Burn. Mr. C. Percy, Clerk to the Highway Board, Alnwick.

BANDON.—June 8.—For Construction of Water Works. Mr. James Price, C.E., 44 Harcourt Street, Dublin.

BARNET.—May 23.—For Construction of Road (1,650 feet) with Kerb. Messrs. W. & F. Houghton, Surveyors, 61 Old Broad Street, E.C.

BATH.—May 25.—For Building River Wall near Monk's Mill. Mr. C. E. Davis, F.S.A., City Architect, 55 Great Pulteney Street, Bath.

BATLEY.—May 29.—For Building Seven Terrace Houses, Park Road. Mr. Walter Hanstock, A.R.I.B.A., Branch Road, Batley.

BELFAST.—May 26.—For Building Waiting-shed and Offices at Brookmount Station. Mr. J. P. Culverwell, Secretary, Great Northern Railway, Belfast.

BINGLEY.—May 28.—For Building Six Cottages. Mr. John Haggas, Architect, North Street, Keighley.

BRIGHOUSE.—June 1.—For Building Coal and Cannel Stores, Station Meter House, Retaining Wall, Purifier House, and Lime Store, and for Columns, Girders, Four Purifiers, with Covers, &c., Cover-lifting Apparatus, and Wrought-iron Roof. Mr. James Parkinson, Engineer, Brighouse.

BUCKNALL.—May 29.—For Building Infectious Diseases Hospital and Fence Wall, and for Drainage and Irrigation Works. Mr. G. W. Bradford, Architect, Miles Bank Chambers, Hanley.

BURNLEY.—May 23.—For Building Vestry and Class-rooms, Organ Case, &c., at Salem Chapel. Mr. G. B. Rawcliffe, Architect, 8 Ormerod Street, Burnley.

BURNLEY.—For Building Two Residences. Mr. C. Parsons, Architect, 9 Grimshawe Street, Burnley.

BUXTON.—May 29.—For Building Destructor and Chimney Shaft, Making Road, &c. Mr. J. Hague, C.E., Town Surveyor, Buxton.

CHRISTCHURCH.—May 28.—For Building Schools for the Guardians of the Poor. Mr. Edgar H. Burton, Architect, Bournemouth.

CIRENCESTER.—May 28.—For Erection of Female Infirmary, Laundry, &c., and Alterations to the Existing Buildings at Union Workhouse. Mr. W. L. Cooke, Solicitor, Cirencester.

CLOWNE.—June 3.—For Building Semi-detached House and Additions to Business and other Premises. Mr. Herbert Hodgson, Architect, 68 High Street, Queensbury.

COLNE AND MARSDEN.—May 25.—For Forming Brick Barrel Sewer; Building Piers, to carry a wrought-iron Trough; the Raising of an Occupation Road; Laying Iron and Earthenware Pipes, 960 yards. Mr. Henry Bancroft, C.E., 83 Mosley Street, Manchester.

CRICCIETH.—June 1.—For Building Nave and other Portions of Church. Messrs. Douglas & Fordham, Architects, 6 Abbey Square, Chester.

DARTFORD.—May 23.—For Building Machinery House for Electric Lighting of Hospital Ships at Long Reach. Messrs. H. Jarvis & Son, Architects, 29 Trinity Square, S.E.

DEWSBURY.—June 3.—For Construction of Reservoir. Messrs. Bateman & Hill, C.E., Albert Chambers, Albert Square, Manchester.

DARLINGTON.—May 27.—For Construction of Pump-house and Iron Tank at Gasworks. Mr. Hugh Dunn, Town Clerk, Darlington.

DENBY DALE.—May 30.—For Enlarging and Re-furnishing Primitive Methodist Chapel. Mr. T. T. Howdell, Architect, 40 Park Lane, Leeds.

DEWSBURY.—May 25.—For Building Branch Stores. Mr. Henry Holtom, Architect, Bond Street, Dewsbury.

DEWSBURY.—May 27.—For Building Two Shops and Alterations of Premises. Mr. Henry Holtom, Architect, Bond Street, Dewsbury.

DONCASTER.—May 29.—For Alterations and Additions to Congregational Church. Mr. C. J. Innocent, Architect, 17 George Street, Sheffield.

DONEGAL.—June 3.—For Erection of Dwellings, Gasworks, Fog-signal House, &c., at Tory Island Lighthouse. Messrs. Gribbon & Butler, Quantity Surveyors, 22 Lombard Street, Belfast.

EDINBURGH.—June 1.—For Building Board School. Mr. Robert Wilson, Architect, 2 Queen Street, Edinburgh.

EDINBURGH.—June 6.—For Construction of Wrought-iron Girder Gangway. Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

ELGIN.—May 28.—For Building Dwelling-house, Public Laundry, and Baths. Mr. H. M. S. Mackay, C.E., Elgin.

ELLAND.—June 4.—For Building Fireproof Mill, Engine and Boiler-houses, Dule Room, Chimney, &c. Messrs. Horsfall & Williams, Architects, Post Office Buildings, Halifax.

GAWTHORPE.—For Building Two Houses. Mr. F. W. Ridgway, Architect, Dewsbury.

HALIFAX.—June 6.—For Erection of Farm-house and other Buildings, Exley Bank Top. Messrs. Jackson & Fox, Architects, 22 George Street, Halifax.

HARROGATE.—For Building Club. Messrs. H. E. & A. Bown, Architects, James Street, Harrogate.



**HECKMONDWIKE.**—May 29.—For Altering and Repairing Chapel. Mr. A. A. Stott, Architect, Heckmondwike.

**HELME.**—May 28.—For Building Residence, Stable, Coach-house, &c. Messrs. John Kirk & Son, Architects, Huddersfield.

**HEREFORD.**—May 25.—For Stables, Carriage-shed, Loose Boxes, Harness-room, &c., at Cattle Market Hotel. Mr. John Parker, City Surveyor, Hereford.

**HEREFORD.**—May 26.—For Additions, Clehonger Vicarage, near Hereford. Messrs. Nicholson & Son, Architects, Hereford.

**HIPPERHOLME.**—May 28.—For Building Three Dwellings at White Hall. Mr. Edwin Taylor, Architect, Hipperholme.

**HOVE.**—June 6.—For Erection of Ornamental Iron Fence (Designs and Tenders). Mr. C. A. Woolley, Town Clerk, Hove, Brighton.

**HUNSLET.**—May 27.—For Building Shop and Twelve Cottages. Messrs. Clayton, Son & Co., Hunslet.

**HYDE.**—June 3.—For Erection of a Stage-floor Retort-house, at the Gasworks. Mr. Thomas Newbigging, C.E., No. 5 Norfolk Street, Manchester.

**KIRKCALDY.**—June 5.—For Construction of Wet Dock and Railways in connection in the County of Fife. Mr. John Macrae, C.E., 107 Princes Street, Edinburgh.

**KILDRUMMY.**—May 25.—For Building Dwelling-house at Ley of Towie. Messrs. Walker & Beattie, Surveyors, 3 Golden Square, Aberdeen.

**KNIGHTON.**—June 3.—For Erection of Workhouse Buildings. Mr. E. H. Deacon, Clerk to the Guardians, Knighton, Radnorshire.

**KNOWLE, FAREHAM.**—June 9.—For Building Group of Cottages at the County Asylum. Mr. James Robinson, County Architect, County Hall, Winchester.

**LEAMINGTON.**—May 23.—For Building St. Nicholas Parish Rooms and Sunday Schools. Mr. J. Cundall, Architect, 90 The Parade, Leamington.

**LISMORE.**—June 3.—For Building Sixty-one Cottages. The Clerk to the Guardians, Lismore.

**LITTLEBOROUGH.**—For Extension of Chapel. Messrs. Potts, Pickup & Dixon, Architects, Oldham.

**LIVEREDGE.**—June 1.—For Engines, Boiler, Machinery, and Apparatus for Sewage Works. Mr. Charles Gott, C.E., 8 Charles Street, Bradford.

**LONG EATON.**—May 23.—For Building Two Cottages, with Out-offices, Boundary Walls, &c., on Sewage Farm. Mr. John Sheldon, Architect, Market Place, Long Eaton.

**MARSH.**—June 2.—For Building Eight Cottages. Mr. J. E. Moseley, Architect, 4 Wellington Buildings, Huddersfield.

**MARYPORT.**—May 23.—For Converting Out-buildings, at Flimby Lodge, into Vagrant Wards. Messrs. Eaglesfield & Son, Architects, Maryport.

**MOLD.**—May 25.—For Building Houses and Shops. Mr. E. Muspratt, Surveyor, 7 John Street, Chester.

**MYTHOLMROYD.**—May 22.—For Building Wesleyan Minister's House. Mr. W. H. Cockroft, Architect, Hanging Royd Road, Hebden Bridge.

**MYTHOLMROYD.**—May 31.—For Building Working Men's Club at Cragg. Mr. W. H. Cockroft, Architect, Hanging Royd Road, Hebden Bridge.

**NEATH.**—May 25.—For Constructing Wooden Bridge over River at Aberdulais. Mr. James Kempthorne, Dyffryn Chambers, Neath.

**NEWBIGGIN.**—May 23.—For Erection of Slaughter-house and other Buildings. Messrs. Boulds & Hardy, Architects, Grainger Street, Newcastle-on-Tyne.

**NEWBRIDGE.**—May 27.—For Building Wesleyan Chapel. Mr. G. Rosser, Architect, Arcade Chambers, Newport, Mon.

**NEWPORT.**—May 20.—For Construction of Two Improved Beale's Patent Gas Exhausters. The Engineer, Gas Offices, Mill Street, Newport, Mon.

**NORMANTON.**—May 28.—For Building Two Shops and Dwelling-houses, with Offices, Warehouse, Landing-stage, Coach-house, Stable, &c. Mr. Thomas Reid, Architect, Normanton.

**NOTTINGHAM.**—May 28.—For Constructing and Laying-out Cattle Market, Eastcroft, including Bridge, Offices, Lodges, &c. Mr. A. Brown, Borough Engineer, Municipal Offices, Nottingham.

**PONTARDULAIS.**—June 1.—For Restoration of St. Teilo's Church. The Vicar, Pontardulais.

**PONTYPRIDD.**—June 2.—For Additions and Alterations to Union Workhouse. Messrs. James, Seward & Thomas, Architects, St. John's Chambers, Cardiff.

**PONTYPRIDD.**—June 4.—For Building Chapel. Mr. Kingdom, New Foundry Road, Hopkinstown, Pontypridd.

**PUDSEY.**—May 25.—For Erection of Farm Buildings. Mr. J. Kendall, Architect, Idle.

**REDRUTH.**—May 29.—For Building Board Schools at Trewirgie. Messrs. G. B. Nichols & Sons, 59 Colmore Row, Birmingham.

**RHYL.**—May 25.—For Building Church. Mr. D. Walker, Architect, 11 Dale Street, Liverpool.

**SCAWTON, HELMSLEY.**—May 25.—For Building Parsonage House. Mr. W. H. Blessley, Architect, Exchange Place, Middlesbrough.

**SHEFFIELD.**—May 25.—For Building Sunday School, with Class-rooms, &c. Mr. C. J. Innocent, Architect, 17 George Street, Sheffield.

**STOKE-ON-TRENT.**—May 30.—For Building Manager's House for Tramways Co. Mr. G. W. Bradford, Architect, Miles Bank Chambers, Hanley.

**SOUTH SHIELDS.**—May 27.—For Erection of Buildings on Corporation Quay. Mr. Matthew Hall, Borough Engineer.

**SWINDON.**—June 6.—For Building Baptist Tabernacle and Schools. Mr. W. H. Read, Architect, Corn Exchange, Swindon.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkes-

# R. ADAMS,

17 BLACKMAN STREET & 7 GREAT DOVER STREET, LONDON, S.E.,  
INVENTOR and PATENTEE of the  
SAFETY WINDOW WITH REVERSIBLE SASHES

FOR

## INEXPENSIVE & PERPETUAL CLEANLINESS

Which has gained at the INTERNATIONAL HEALTH and  
SANITARY EXHIBITIONS

2 Gold, 4 Silver, and 4 Bronze Medals,  
and 16 Diplomas of Merit.

The fearful sacrifice yearly of Life and Limb of persons in cleaning windows through sitting or standing outside whilst so engaged is most appalling. This can now be entirely prevented. The Patentee, having given this subject the most exhaustive study, is now prepared to supply his patent fittings suitable both for old and new windows at prices to meet the means of all. These improvements are protected by several patents, by each of which the outside of each sash can be reversed for cleaning, and under this new system that duty is rendered a pleasure, whilst the danger, risk, and tremendous responsibility of moral and statute law is removed.

These patent fittings can be procured from 5s. for each sash, and all builders have the right conferred upon them to fit the same in the purchase thereof, and that all shall have the benefit of this national boon, special Agencies are being established throughout the United Kingdom. None but practical and responsible firms are appointed. Such firms are invited to apply for unrepresented districts at once, as it is desirable to complete the list as soon as possible.

The present representatives are:—

|  |  |
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| Barnstable   | Hancock, Pilton Street.                    |
| Belfast and 10 miles round   | W. J. Watson, Royal Avenue, Belfast.       |
| Bournemouth and 10 miles round   | H. W. Jenkins & Son, Builders.             |
| Brighton and 8 miles round   | Cheesman & Co., Kensington Street.         |
| Bristol and 20 miles round, and Gloucestershire, Somerset, Dorset, Wilts, Mon., Glamorganshire | Brook & Bruce, Albert Road, St. Phillip's. |
| Dublin and 20 miles round  | J. & W. Beckett, 28 South King Street.     |
| Dundee and 30 miles round  | Stewart Robertson, 34 Bank Street.         |
| Edinburgh  |  |
| Exeter and 20 miles round  | W. R. Commings, 45 Longbrook Street.       |
| Glasgow and 30 miles round   | Baird, Thompson & Co., 24 Bath Street.     |
| Gloucester and Cheltenham  | The Sanitary and Economic Association.     |

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|----------------------------------|--|
| Hastings                         |  |
| Hereford and 5 miles round       |  |
| Ilfracombe                       |  |
| Leeds and 5 miles round          |  |
| Liverpool                        |  |
| Ludlow and Leominster            |  |
| Newton Abbott and 10 miles round |  |
| Nottingham and 15 miles round    |  |
| Reading and 5 miles round        |  |
| Southampton and 7 miles round    |  |
| Sunderland and 10 miles round    |  |
| Torquay and 5 miles round        |  |



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| Taylor Bros., Builders.                                      |
| C. Lawrence, 41 Portland Street.                             |
| W. Jones, 4 Osborne Road.                                    |
| John Wm. Lewis, 65 Albion Street.                            |
| Evan Griffiths & George Finning, Sefton Works, Miles Street. |
| J. Grosvenor, Ludlow.  |
| Parker Bros., Courtney Street.                               |
| Henry Vickers, Welford Road.                                 |
| Driver & Co., St. Mary Saw Mills, Southampton.               |
| C. & W. Waton, Union Street.                                 |



bury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

TOWCESTER.—June 10.—For Alterations and Additions to Malt Houses. Messrs. H. Stopes & Co., Architects, 24A Southwark Street, S.E.

TEDDINGTON.—June 1.—For Erection of Suspension Footbridge over the Thames, and Lattice Girder Footbridge over Lock Cut. Mr. George Pooley, 26 Charing Cross, S.W.

THIRSK.—May 25.—For Building Courthouse and Making Alterations to Police-station. Mr. Walker Stead, C.E., Courthouse, Northallerton.

THURSO.—May 30.—For Works in Connection with Building Stone Bridge. Messrs. MacBey & Gordon, C.E., Elgin.

TOTTENHAM.—For Building Board Schools. Messrs. E. & E. B. Ellis, 9 Fenchurch Street, E.C.

TWICKENHAM.—May 23.—For Taking Down and Rebuilding Stable, Slaughter-houses, &c. The Surveyor, 21 Church Street, Twickenham.

WALTHAMSTOW.—May 29.—For Construction of Wooden Troughing, Staging, &c. (1,700 feet), at Sewage Farm. Mr. G. B. Jerram, Engineer, Town Hall, Walthamstow.

WALTHAMSTOW.—May 29.—For Construction of Earth and Concrete Carriers (1,700 yards), &c. Mr. J. B. Jerram, Engineer, Town Hall, Walthamstow.

WELLINGTON.—June 7.—For Building Bank Premises. Mr. E. T. Howard, Architect, North Street, Wellington, Somerset.

WEST HARTLEPOOL.—June 3.—For Building Smiths' Shop, Storehouse, Office, &c., at the Graving Dock. Mr. William Bell, Architect, Newcastle.

WISHAW.—June 3.—For Construction of Storage Reservoirs and Works in connection. Mr. James Tait, C.E., Wishaw.

WRITTLE.—May 29.—For Rebuilding Chapel. Mr. Charles Pertwee, Architect, Bank Chambers, Chelmsford.

WORKINGTON.—May 23.—For Building Infirmary. Mr. George Dale Oliver, Architect, Pow Street, Workington.

## TENDERS.

## ASHFORD.

For Additional Buildings at Pumping Station, Ashford. Mr. F. WILLSON, Surveyor.  
Hughes . . . . . £450 0 0  
Wood . . . . . 440 0 0  
Surveyor's estimate . . . . . 447 5 0

## BATLEY.

For Enlargement of Blenheim House, Batley. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley. Quantities by the Architect.  
Goodall, Batley, mason . . . £410 0 0  
North, Batley, joiner . . . 281 0 0  
Cordingley & Sons, Bradford, plasterer . . . . . 115 0 0  
Jessop, Batley, plumber . . . 73 0 0  
Thornton, Heckmondwike, slater . . . 29 0 0  
Total . . . . . £908 0 0

## BRAY.

For Constructing Bathing Pier, &c., from Esplanade, Bray, co. Wicklow. Mr. P. F. COMBER, C.E., Civil Engineer, 47 College Green, Dublin. Quantities by the Engineer.  
Brady, Bray . . . . . £3,916 4 10  
Doherty, Dublin . . . . . 3,797 0 0  
Moss, Liverpool . . . . . 3,717 0 0  
Tighe & Son, Dublin . . . . . 3,306 0 0  
McAlpine, Glasgow . . . . . 2,600 0 0

For Construction of Thirty Wooden Bathing-boxes on the sea-front of the Ladies' Baths, Bray. Mr. P. F. COMBER, C.E., 37 College Green, Dublin.

Brady, Bray . . . . . £312 8 0  
Pile, Dublin . . . . . 300 0 0  
Brooks, Thomas & Co., Dublin . . . 295 19 3  
Pemberton, Killiney . . . . . 285 0 0  
Pemberton & Son, Dublin . . . . . 282 0 0  
Wardrop & Son, Dublin . . . . . 280 1 0  
Jackson, Dublin . . . . . 204 0 0  
Connolly & Son, Dublin . . . . . 200 0 0  
BRESLAU, Dublin (accepted) . . . 192 15 9

## BRIXHAM.

For Rebuilding First Section of Parish Church, Lower Brixham. Mr. SOMERS CLARKE, Architect, Westminster.  
Hazlewood Bros., Brixham . . . £1,864 0 0  
Toop, Torquay . . . . . 1,820 0 0  
Goss, Torquay . . . . . 1,775 0 0  
SPARKES & HAYMAN, Brixham  
(accepted) . . . . . 1,695 9 0

## BRYNWERN.

For Building Residence, Stables, Coachman's House, Garden Walls, and Lodge, at Brynwern, Breconshire. Mr. STEPHEN W. WILLIAMS, Architect, Rhayader. Quantities by the Architect.  
Davies & Son, Newtown . . . £6,140 8 0  
Bowers & Co., Hereford . . . 5,845 15 0  
Williams, Knighton . . . . . 5,671 0 0  
D. C. Jones, Gloucester . . . 5,613 0 0  
J. Jones, Ystradmeurig . . . 5,350 19 0  
Edwards, Leominster . . . . . 5,126 0 0  
Treasure & Son, Shrewsbury . . . 4,642 16 3  
PRICE, Shrewsbury (accepted) . . . 4,620 0 0

## CARDIFF.

For the Painting at Engine-house, &c., Cogan, Cardiff, for the Waterworks Committee.  
Gillard Bros. . . . . £60 0 0  
Warren . . . . . 38 0 0  
Davis & Son . . . . . 24 15 0  
Lewis . . . . . 24 0 0  
GUEST (accepted) . . . . . 18 10 0  
All of Cardiff.

For Supply of Cast-iron Surface Boxes of various sizes, for the Waterworks Committee of the Cardiff Corporation.

South Wales Engineering Works . . £26 14 6  
Cardiff Junction Engineering Co. . . 18 8 0  
Globe Foundry Co. . . . . 17 4 0  
Davies . . . . . 15 16 3  
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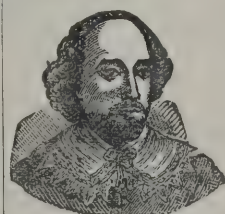
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|   |          |
|---|----------|
| For Additions to No. 38 Castle Road, for Mr. S. Joseph. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff. |          |
| Harris . . . . .  | £296 0 0 |
| Trotman . . . . .   | 290 0 0  |
| Griffiths . . . . .   | 270 0 0  |
| Jenkins & Griffiths . . . . .   | 263 0 0  |
| Lock . . . . .  | 252 0 0  |
| JONES BROS. (accepted)  | 250 0 0  |

For Building Block of Houses at Cadoxton for Mr. John Kyte Collett. Mr. SYDENHAM W. RICHARDS, Herbert Chambers, Architect.

ROWLEDGE, Castle Road (accepted).

For Additions to Buildings for the Penarth Sanitary Company. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

Roberts.

For Building Superstructure to No. 8 Bellevue Terrace, Penarth, for Mr. Harding. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.

THOMAS (accepted).

**CARLISLE.**

For the Alteration of Cottages, Broad Guards, for the Enterprise Building Society. Mr. J. GRAHAM, Architect, Bowling Green, Lowther Street, Carlisle.

**Accepted Tenders.**

|                                 |          |
|---------------------------------|----------|
| Wilkinson, joiner . . . . .     | £381 0 0 |
| Newton, builder . . . . .       | 319 3 6  |
| Harrington, plasterer . . . . . | 100 0 0  |
| Thomson, plumber . . . . .      | 42 18 6  |
| Allan, painter . . . . .        | 40 0 0   |
| Newton, slater . . . . .        | 31 13 0  |

For Works in Extension of Cemetery, Carlisle.

**Wall, &c.**

|                    |          |
|--------------------|----------|
| Metcalfe . . . . . | £800 0 0 |
|--------------------|----------|

**Bridge, &c.**

|                         |         |
|-------------------------|---------|
| J. & W. Beaty . . . . . | 780 0 0 |
|-------------------------|---------|

**Earthworks.**

|                     |          |
|---------------------|----------|
| Beaty Bros. . . . . | 163 14 9 |
|---------------------|----------|

**CARLISLE—continued.**

|  |          |
|--|----------|
| For Extension of Board Schools. Mr. D. BIRKETT, Architect, Carlisle. |          |
| <i>Caldengate School.</i>  |          |
| Bell, builder . . . . .  | £395 0 0 |
| Black, joiner . . . . .  | 268 8 0  |
| Smith & Sons, slater . . . . .                                       | 70 0 0   |
| Ferguson, plasterer . . . . .  | 56 0 0   |
| Anderson, plumber . . . . .  | 23 0 0   |
| Palmer, painter . . . . .  | 34 0 0   |

**Denton Holme School.**

|                                   |         |
|-----------------------------------|---------|
| Beaty Bros., builders . . . . .   | 325 0 0 |
| Batey & Forster, joiner . . . . . | 129 0 0 |
| Nanson, slater . . . . .          | 43 17 6 |
| Palmer, painter . . . . .         | 15 0 0  |
| Ferguson, plasterer . . . . .     | 14 0 0  |
| Thomson & Son, plumber . . . . .  | 13 0 0  |

**CHATHAM.**

|   |          |
|---|----------|
| For Re-erection of Clothing Factory, Chatham. Mr. JOHN DRAKE, Architect, Rochester. |          |
| Trueman, Luton . . . . .  | £889 9 0 |
| Hopper & Seward, Strood . . . . .   | 723 0 0  |
| West, Strood . . . . .  | 700 0 0  |
| Bathurst Bros., Chatham . . . . .   | 674 15 0 |
| Sampson, Chatham . . . . .  | 655 0 0  |
| Marshall, Chatham . . . . .   | 596 0 0  |
| Pankhurst, Chatham . . . . .  | 580 0 0  |
| Skinner, Chatham . . . . .  | 525 0 0  |
| Alloway, Chatham . . . . .  | 498 0 0  |

**CLAYTON.**

|  |          |
|--|----------|
| For Building Villa Residence, Stabling and Out-offices, Clayton Heights, near Bradford. Mr. JOHN DRAKE, Architect, Queensbury. |          |
| Quantities by the Architect.   |          |
| Balmforth & Reece, mason . . . . .   | £645 0 0 |
| Taylor, joiner . . . . .   | 245 0 0  |
| Smithies, slater . . . . .   | 61 0 0   |
| Allatt, plumber . . . . .  | 60 0 0   |
| Sunderland, plasterer . . . . .  | 57 0 0   |

**COLCHESTER.**

|   |          |
|---|----------|
| For Building a New Bar, and Alterations to the White Hart, West Mersea, for Messrs. S. T. Daniell & Co., East Donyland. Mr. J. W. START, Colchester, Architect. |          |
| Woods, Feldon . . . . .   | £201 4 0 |
| START, Colchester (accepted)  | 198 14 0 |

**DEIGHTON.**

For Extension of Woodhouse Corn Mill, Deighton. Mr. JOHN EDWARD MOSELEY, Architect, 4 Wellington Buildings, Huddersfield. Quantities by the Architect.

**Accepted Tenders.**

|   |           |
|---|-----------|
| Brook, Deighton, mason . . . . .                    | £419 10 0 |
| Midwood, Huddersfield, joiner . . . . .             | 172 0 0   |
| Taylor & Sons, Marsden, iron-founder . . . . .      | 45 0 0    |
| George, Huddersfield, plumber and glazier . . . . . | 25 15 0   |
| Cook, Folly Hall, asphalter . . . . .               | 12 12 0   |

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**Price Street.**

|                               |         |
|-------------------------------|---------|
| Davis . . . . .               | £44 0 0 |
| Bennett & Ball . . . . .      | 40 15 0 |
| Berry . . . . .               | 40 5 0  |
| Surveyor's estimate . . . . . | 42 11 0 |

**Fisher Street.**

|                               |          |
|-------------------------------|----------|
| Davis . . . . .               | 116 15 0 |
| Berry . . . . .               | 112 11 0 |
| Bennett & Co. . . . .         | 111 3 0  |
| Surveyor's estimate . . . . . | 113 15 0 |

**Stafford Street.**

|                               |         |
|-------------------------------|---------|
| Davis . . . . .               | 34 11 0 |
| Bennett & Co. . . . .         | 34 4 0  |
| Berry . . . . .               | 33 13 0 |
| Surveyor's estimate . . . . . | 33 13 0 |

**Entire Works.**

|                               |          |
|-------------------------------|----------|
| Jeavons . . . . .             | 236 0 0  |
| Davis . . . . .               | 195 6 0  |
| Owens . . . . .               | 189 0 0  |
| Berry . . . . .               | 186 9 0  |
| Bennett & Ball . . . . .      | 186 2 0  |
| Surveyor's estimate . . . . . | 189 19 0 |

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For Building Parish Hall, St. Nicholas, Guildford. Mr. W. G. LOWER, Architect, Guildford. Quantities by Mr. H. Moon, Godalming.

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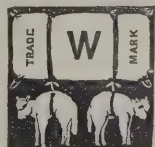
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Thomas, Old Star . . . . . 669 0 0  
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|                     |        |   |   |
|---------------------|--------|---|---|
| Mowlem              | £6,960 | 0 | 0 |
| Dove Bros.          | 6,495  | 0 | 0 |
| Hall, Beddall & Co. | 6,489  | 0 | 0 |
| Ashby & Horner      | 6,435  | 0 | 0 |
| Corder              | 6,355  | 0 | 0 |
| Colls & Sons        | 6,095  | 0 | 0 |
| Brass & Son         | 5,977  | 0 | 0 |

For Completion of Medical Superintendent's House, Lodge, &c., at the Western Hospital, Seagrave Road, Fulham, for the Metropolitan Asylums Board. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities supplied.

|                   |        |   |   |
|-------------------|--------|---|---|
| Proctor           | £3,692 | 0 | 0 |
| Chafen            | 3,620  | 0 | 0 |
| Balaam Bros.      | 3,316  | 0 | 0 |
| Dicksee & Dicksee | 3,150  | 0 | 0 |
| Angood            | 3,059  | 0 | 0 |
| Smith & Son       | 2,979  | 0 | 0 |
| Garrud            | 2,973  | 0 | 0 |
| Johnson           | 2,852  | 0 | 0 |
| Harper & Co.      | 2,844  | 0 | 0 |
| Lyford            | 2,811  | 0 | 0 |
| Pack Bros.        | 2,761  | 0 | 0 |

FELTHAM BROS., Chelsea (accepted).

|  |       |   |   |
|--|-------|---|---|
|  | 2,645 | 0 | 0 |
|--|-------|---|---|

For Erection of Medical Superintendent's House and Registrar's Office, Harrow Road, for the Guardians of Paddington. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities supplied.

|                |        |    |   |
|----------------|--------|----|---|
| Belham & Co.   | £3,993 | 16 | 3 |
| Feltham Bros.  | 3,748  | 0  | 0 |
| Angood         | 3,740  | 0  | 0 |
| Taylor & Grist | 3,705  | 0  | 0 |
| Harper & Co.   | 3,557  | 0  | 0 |
| Haynes         | 3,551  | 0  | 0 |
| Garrud         | 3,507  | 0  | 0 |

JOHNSON, Wandsworth Common (accepted).

|        |       |   |   |
|--------|-------|---|---|
| Marten | 3,364 | 0 | 0 |
|        | 3,300 | 0 | 0 |

## LONDON—continued.

For Erection of new Mission Chapel, Hackney Wick. Mr. J. WEIR, Architect.

|              |        |   |   |
|--------------|--------|---|---|
| Lathey Bros. | £1,594 | 0 | 0 |
| Jarvis       | 1,531  | 0 | 0 |
| Hobson       | 1,395  | 0 | 0 |
| Shurmur      | 1,395  | 0 | 0 |
| Holloway     | 1,300  | 0 | 0 |

For Alterations, Repairs, &c., to Warehouses and Offices, Nos. 4, 5, 6, and 7 Great St. Thomas Apostle, Queen Street, E.C., for the District Railway Company. Mr. FRANK JOB CHAMBERS, Architect.

SHAW (accepted) £2,614 0 0

For Alterations and Additions at the Pelham Arms, Pelham Street, South Kensington, S.W., for Mrs. Porch. Mr. H. I. NEWTON, Architect, 17 Queen Anne's Gate, Westminster.

|                           |      |   |   |
|---------------------------|------|---|---|
| Burman                    | £717 | 0 | 0 |
| Gibbs & Flew              | 608  | 0 | 0 |
| Lamble                    | 559  | 0 | 0 |
| Walker                    | 527  | 0 | 0 |
| STEEL, Dalston (accepted) | 448  | 0 | 0 |

## Pewterer's Work.

|                                |    |    |   |
|--------------------------------|----|----|---|
| Hellings                       | 55 | 8  | 0 |
| Davidson                       | 49 | 10 | 0 |
| HEATH, Goswell Road (accepted) | 45 | 0  | 0 |

For Alterations at the Green Man, Cambridge Road, Bethnal Green, for Mr. F. Cakebread. Mr. EDWARD BROWN, Architect, Hanbury Street, Spitalfields.

|                     |      |   |   |
|---------------------|------|---|---|
| Mower               | £496 | 0 | 0 |
| Anley               | 480  | 0 | 0 |
| Jackson & Todd      | 475  | 0 | 0 |
| Marr                | 447  | 0 | 0 |
| HAWKINGS (accepted) | 389  | 0 | 0 |
| Steel Bros.         | 345  | 0 | 0 |

## Pewterer's Work.

|                    |    |    |   |
|--------------------|----|----|---|
| Warne              | 90 | 0  | 0 |
| PRINGLE (accepted) | 69 | 18 | 0 |
| Rogers             | 59 | 14 | 0 |

## Gasfitter's Work.

|                     |    |    |   |
|---------------------|----|----|---|
| Christian           | 68 | 10 | 0 |
| STEADMAN (accepted) | 67 | 0  | 0 |

## LONDON—continued.

For Building Board School, Broomsleigh Street, Marylebone. Mr. T. J. BAILEY, Architect.

|                       |         |   |   |
|-----------------------|---------|---|---|
| Boyce                 | £12,100 | 0 | 0 |
| Goodman               | 11,997  | 0 | 0 |
| Johnson               | 11,490  | 0 | 0 |
| Patman & Fotheringham | 11,418  | 0 | 0 |
| Shurmur               | 11,300  | 0 | 0 |
| Cox                   | 11,299  | 0 | 0 |
| Grover & Son          | 11,271  | 0 | 0 |
| Holloway              | 11,203  | 0 | 0 |
| Wall Bros.            | 11,197  | 0 | 0 |
| Scrivener             | 10,991  | 0 | 0 |
| Reading               | 10,978  | 0 | 0 |
| Howell & Son          | 10,885  | 0 | 0 |
| Jerrard               | 10,879  | 0 | 0 |
| Stimpson & Co.        | 10,788  | 0 | 0 |
| Oldrey                | 10,738  | 0 | 0 |
| Kirk & Randall        | 10,687  | 0 | 0 |
| Atherton & Latta      | 10,650  | 0 | 0 |
| C. Wall               | 10,550  | 0 | 0 |

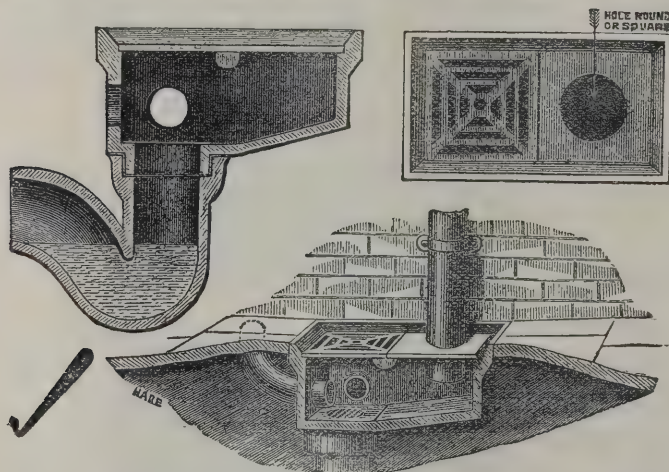
For Enlargement of Collingwood Street Board School, Ratcliff. Mr. T. J. BAILEY, Architect.

|                       |        |   |   |
|-----------------------|--------|---|---|
| Holloway Bros.        | £2,994 | 0 | 0 |
| Larke & Son           | 2,991  | 0 | 0 |
| J. Holloway           | 2,942  | 0 | 0 |
| Goodman               | 2,850  | 0 | 0 |
| F. & F. J. Woods      | 2,797  | 0 | 0 |
| Johnson               | 2,712  | 0 | 0 |
| Patman & Fotheringham | 2,700  | 0 | 0 |
| Hobson                | 2,690  | 0 | 0 |
| Shurmur               | 2,685  | 0 | 0 |
| Oldrey                | 2,682  | 0 | 0 |
| Wall Bros.            | 2,671  | 0 | 0 |
| Howell & Son          | 2,667  | 0 | 0 |
| Pritchard & Son       | 2,660  | 0 | 0 |
| Scrivener & Co.       | 2,625  | 0 | 0 |
| Jerrard               | 2,588  | 0 | 0 |
| Cox                   | 2,511  | 0 | 0 |
| Stimpson & Co.        | 2,444  | 0 | 0 |
| Kirk & Randall        | 2,355  | 0 | 0 |
| Atherton & Latta      | 2,200  | 0 | 0 |

For Heating Holy Trinity Church, Hereford. BACON & Co., London (accepted).

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This Gully possesses the following advantages:—

Receives and disconnects one Rain-water Pipe and Three Waste Pipes.

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Ventilates the Pipes and Trap.

Is easy of Access for Clearance.

The ordinary P or S trap to be used in connection with Gully being in a separate piece, can be placed at any angle to meet the drain exactly, thus insuring a perfect joint, the Gully being fixed at right angles. This is a great advantage over other arrangements made with the trap in one piece.

The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.

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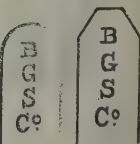
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## LONDON—continued.

For Alterations, &c., to the Seabright Music Hall, Hackney Road. Mr. J. G. BUCKLE, Architect.

|                             |            |
|-----------------------------|------------|
| Shurmer . . . . .           | £1,440 0 0 |
| Steel Bros. . . . .         | 1,390 0 0  |
| Lang & Son . . . . .        | 1,350 0 0  |
| Cox . . . . .               | 1,227 0 0  |
| Searchfield & Son . . . . . | 1,058 0 0  |

For various Works for the London School Board.

Brentwood Industrial School: Taking out present Boiler and Fixing new Steam Boiler, with all necessary Fittings.

|                          |         |
|--------------------------|---------|
| Price, Lea & Co. . . . . | £71 0 0 |
| Cannon . . . . .         | 47 10 0 |
| Longden & Co. . . . .    | 35 0 0  |

Portobello Road School: Basins for Girls' Lavatory.

|                     |        |
|---------------------|--------|
| Oldrey . . . . .    | 25 0 0 |
| Davis Bros. . . . . | 24 0 0 |

Cottenham Road School: Basins for Girls' Lavatory.

|                         |        |
|-------------------------|--------|
| Kirby & Chase . . . . . | 13 0 0 |
| Chapman . . . . .       | 12 7 9 |

Wandsworth Road School: Cleaning and Repairs.

|                    |         |
|--------------------|---------|
| Johnson . . . . .  | 49 10 0 |
| Mallett . . . . .  | 49 0 0  |
| Holloway . . . . . | 45 0 0  |
| Hobson . . . . .   | 37 10 0 |

Winstanley Road School: Partition.

|                       |        |
|-----------------------|--------|
| Johnson . . . . .     | 42 0 0 |
| Rice . . . . .        | 37 0 0 |
| Nightingale . . . . . | 34 0 0 |

Hunter Street School: Repairing Steps and Cleaning Schoolkeeper's Apartments.

|                           |          |
|---------------------------|----------|
| Pritchard & Son . . . . . | £47 17 6 |
| Rice . . . . .            | 47 10 0  |
| Roy . . . . .             | 42 0 0   |

Hatfield Street School: Repairing Steps.

|                       |         |
|-----------------------|---------|
| Davis Bros. . . . .   | 54 0 0  |
| Hobson . . . . .      | 45 0 0  |
| Nightingale . . . . . | 44 15 0 |
| Curtis . . . . .      | 44 4 0  |

## LONDON—continued.

Hamond Square School: New Water-closets and Urinals for Infants.

|                           |          |
|---------------------------|----------|
| Shurmer . . . . .         | £159 0 0 |
| Smith Bros. . . . .       | 153 0 0  |
| Pritchard & Son . . . . . | 150 0 0  |
| Cox . . . . .             | 135 0 0  |

Darby Street School: Cleaning and Painting.

|                           |         |
|---------------------------|---------|
| Knight & Walden . . . . . | 35 15 0 |
| Tait & Co. . . . .        | 32 10 0 |
| Howard . . . . .          | 29 1 0  |
| Coombe . . . . .          | 25 18 0 |

## Notice Boards.

|                         |              |
|-------------------------|--------------|
| Dowling . . . . .       | 7s. 6d. each |
| Troughton & Co. . . . . | 7s. 3d. "    |
| Cruwys . . . . .        | 7s. 0d. "    |
| Davis Bros. . . . .     | 6s. 10d. "   |

## Repairs to Furniture.

Grove Road School.

|                    |         |
|--------------------|---------|
| Williams . . . . . | 13 14 0 |
| Bodker . . . . .   | 13 7 6  |
| Jones . . . . .    | 13 0 0  |

Wellington Street School.

|                     |        |
|---------------------|--------|
| Davis Bros. . . . . | 11 6 0 |
| Cruwys . . . . .    | 11 0 0 |

Maidstone Street School.

|                         |        |
|-------------------------|--------|
| Davis Bros. . . . .     | 12 9 0 |
| Cruwys . . . . .        | 11 5 0 |
| Troughton & Co. . . . . | 11 0 0 |

Holden Street School.

|                     |        |
|---------------------|--------|
| Bodker . . . . .    | 9 10 0 |
| Davis Bros. . . . . | 7 18 0 |

Midway Place School.

|                     |        |
|---------------------|--------|
| Williams . . . . .  | 9 18 6 |
| Jones . . . . .     | 9 0 0  |
| Davis Bros. . . . . | 8 16 0 |

Riley Street School.

|                     |        |
|---------------------|--------|
| Bodker . . . . .    | 21 0 0 |
| Davis Bros. . . . . | 19 5 0 |
| Williams . . . . .  | 18 5 6 |

Albion Street School.

|                    |        |
|--------------------|--------|
| Jones . . . . .    | 8 0 0  |
| Williams . . . . . | 7 18 0 |

## NORTHAMPTON.

For Alterations and Additions to Premises, Gold Street, Northampton, for the Northampton Conservative Club Company. Mr. EDMUND LAW, F.R.I.B.A., Architect. Quantities by the Architect.

|  |            |
|--|------------|
| Cosford, Northampton . . . . .                   | £1,080 0 0 |
| Beardmore, Northampton . . . . .                 | 1,070 0 0  |
| Branson & Son, Northampton . . . . .             | 1,061 0 0  |
| Green Bros., Northampton . . . . .               | 1,050 0 0  |
| Watkin, Northampton . . . . .                    | 1,050 0 0  |
| Clayson & Sons, Cogenhol . . . . .               | 1,049 0 0  |
| Archer, Northampton . . . . .                    | 1,030 0 0  |
| Martin, Northampton . . . . .                    | 1,014 10 8 |
| Dunkley, Northampton . . . . .                   | 1,000 0 0  |
| Reynolds & Son, Northampton . . . . .            | 1,000 0 0  |
| Ireson, Northampton . . . . .                    | 998 0 0    |
| E. Fisher, Northampton . . . . .                 | 990 0 0    |
| G. J. Fisher, Northampton . . . . .              | 960 0 0    |
| WOODFORD & SON, Northampton (accepted) . . . . . | 960 0 0    |

## NOTTINGHAM.

For Building Workshops, Stores, Stabling, Dwelling-house, and other Buildings in Woodborough Road and Windsor Street, Nottingham, for the Gas Committee. Mr. M. O. TARBOTTON, Engineer.

|                                       |            |
|---------------------------------------|------------|
| Highest tender . . . . .              | £7,376 0 0 |
| HIND, Nottingham (accepted) . . . . . | 6,357 0 0  |
| Engineer's estimate . . . . .         | 6,200 0 0  |

## PENRHYNDENDRAETH.

For Main Sewerage and Works Connected. Mr. THOS. ROBERTS, Assoc. C.E.

|  |             |
|--|-------------|
| White & Owens, Aberystwith . . . . .   | £1,696 14 0 |
| Griffiths, Criccieth . . . . .         | 1,368 18 6  |
| Mathews, Criccieth . . . . .           | 1,327 0 0   |
| Owen, Portmadoc . . . . .              | 1,284 0 0   |
| Thomas, Bangor . . . . .               | 1,281 5 0   |
| DAVIES, Portmadoc (accepted) . . . . . | 1,240 0 0   |
| Engineer's estimate . . . . .          | 1,381 16 4  |

## POOLE.

For Repairing Sea Wall, Hamworthy, Poole. Mr. J. ELFORD, Borough Surveyor, Poole.

|                                    |           |
|------------------------------------|-----------|
| Perkins, Wareham . . . . .         | £900 18 4 |
| Pond, Wimborne . . . . .           | 442 0 0   |
| LOADER, Poole (accepted) . . . . . | 250 0 0   |

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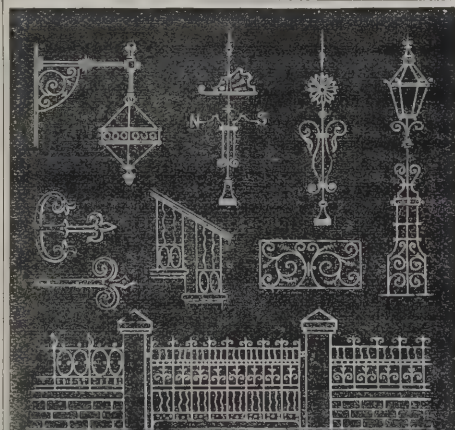
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For Drain and Ventilator in Cherville Street, Romsey.  
FRY (accepted) . . . . .£36 7 9

**SELBY.**

For Building Cemetery Chapel, Boundary Walls, Entrance Gates, and Forming Cemetery at Carlton, Selby. Quantities by Mr. W. H. Brayshaw, Finsbury Pavement, E.C.  
R. Hinsley, Carlton . . . . .£1,314 7 3  
Jackson Bros., Goole . . . . .1,145 0 0  
T. HINSLEY, Carlton (accepted) 900 0 0

**SHOREHAM.**

For Additions to the Workhouse, New Shoreham. Mr. CHARLES DALBY, Architect, Steyning.  
Steele, Portslade . . . . .£252 5 0  
Pontin, Havant . . . . .222 17 0  
Longley, Crawley . . . . .217 0 0  
Sawle, Worthing . . . . .200 16 10  
Gates, New Shoreham . . . . .193 0 0  
CURD & WILLET, New Shoreham (accepted) . . . . .163 15 0

**TORQUAY.**

For Building Cottage near the Kennick Reservoir, Christow, Torquay. Mr. T. S. WEEKS, C.E.  
Drake, Torquay . . . . .£446 0 0  
J. C. & W. Watson, Torquay . . . . .425 0 0  
Yeo, Torquay . . . . .418 12 6  
Smerdon, Torquay . . . . .405 0 0  
S. & M. PACK, Torquay (accepted) 378 8 0

**TOWCESTER.**

For Erection of Cemetery Chapel, Cottage, and Outbuildings, Laying Out Ground, &c., Towcester. Mr. S. J. NEWMAN, Architect. Mr. JOHN EUNSON, C.E., Engineer, Northampton.  
HEATH (accepted) . . . . .£1,088 10 0  
Seven tenders were received, and the tender of Mr. Thomas Heath, of Towcester and 40 South Eaton Place, Eaton Square, S.W., the lowest, was accepted.

**TUNSTALL.**

For Works at St. Mary's Church, Tunstall. Messrs. RALPH DAIN & SON, Architects, Burslem. Quantities by the Architects.

**Contract No. 1.****For Painting and Decorating.**

Bennett, Manchester . . . . .£120 0 0  
Earp, Tunstall . . . . .100 17 6  
Addison, Tunstall . . . . .95 0 0  
ROWLEY, Tunstall (accepted) . . . . .75 0 0

**Contract No. 2.**

For Additions to Vestry, North Porch, Oak Panelling for Chancel Ceiling, Wood-block Floor for Aisles, &c.

Deductions for North Porch if omitted.

Smith, Tunstall . . . . .£353 0 0 £51 0 0  
Bennett, Burslem . . . . .314 0 0 43 0 0  
York, Tunstall . . . . .294 0 0 46 0 0  
COPE,\* Tunstall . . . . .298 0 0 70 0 0

\* Accepted, North Porch omitted.

**WEST COWES.**

For Laying Sewer at Point, West Cowes.

Thomas & Son . . . . .£147 11 3  
Jones . . . . .117 15 0  
J. Meader, jun. . . . .107 10 0  
Coker . . . . .98 10 0  
GATES (accepted) . . . . .98 0 0

**WORKINGTON.**

For Sewerage Works, Westfield, Workington.

Whitfield, Workington . . . . .£592 12 6  
Smith, Maryport . . . . .564 3 3  
Taylor, Workington . . . . .461 15 0  
JOHNSON (accepted) . . . . .450 17 3

For Building Two Shops, Workington. Mr. J. HOWES, Architect, Bridge Street, Workington.

**Accepted Tenders.**

Waller & Mason, excavator.  
Lister, Mc'Cartney & Lister, carpenter and joiner.  
Bragg, slater.  
Whitfield, plasterer.  
Perrin, smith and plumber.  
Turnbull & Keenlidsie, painter and glazier.  
All of Workington.

**YARMOUTH.**

For Extension of Chancel of Church at Yarmouth, Isle of Wight. Messrs. JOHN COLSON & SONS, Architects, 45 Jewry Street, Winchester.  
White, Bishops Waltham . . . . .£374 10 0  
Bull & Sons, Southampton . . . . .274 0 0  
Ball, West Cowes . . . . .268 17 6  
Hayles, Shanklin . . . . .245 0 0  
Jenkins, Newport . . . . .222 0 0  
DENHAM, Freshwater (accepted) 200 0 0

**TRADE NOTES.**

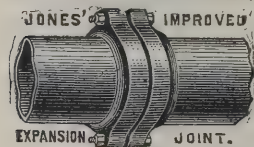
MR. MABEY, whose lamp columns at Northumberland Avenue are so much admired, has been requested by the City Lands Committee to send in a design for the new statue of *Queen Anne* to be erected in the place of the existing statue in St. Paul's Churchyard.

A MEDAL has recently been presented by the Government of India to all those who took any leading part in contributing to the success of the Calcutta International Exhibition. The medal, which is 3 inches diameter, bears on the obverse a portrait of the Queen, with the words "Victoria Empress." Her Majesty is represented as wearing her royal crown, from which a veil falls over the back of the head and neck. She also wears the star, badge, and riband of the Order of the Star of India. The reverse shows a group of allegorical female figures representing India seated under the protection of Britannia, surrounded by articles of Indian produce and manufacture, while before her stand or kneel Europe, America, Africa, and Australia, bringing the various products and inventions of their countries for submission to the inspection of India. The medals were designed and executed by Messrs. Wyon, of Regent Street, London.

THE ancient church of Nunnington, which was reopened in August last, after restoration, has just received the addition of a handsome marble reredos, the gift of Mr. John Rutson, of Nunnington Hall and Newby Wiske. The

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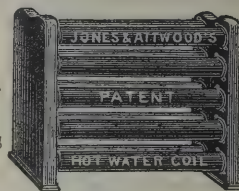
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&c.

SILVER MEDAL, 1881.



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eredos, which covers the whole of the east wall below the window, is of red Devonshire marble, divided into long panels by strips of black Belgian marble. In the centre tablet is the sacred monogram, with the Alpha and Omega in the tablets on the north and south sides. The whole is surmounted by a cornice of Caen stone. The design was supplied by Mr. Ewan Christian, under whose direction the restoration of the church was carried out; and Messrs. Williams & Nash, of Holborn, executed the reredos.

THE Executive Committee of the International Inventions Exhibition having selected Phillips's patent lockjaw roofing tiles for the roof of the pavilion, situated outside the north court, Mr. Charles D. Phillips, of Newport, Mon., completed the roof with his patent tiles, although at short notice, in excellent time, and has erected a very attractive and ornamental building, which is occupied by Mr. Etzenburg, and is situated in a very prominent position. The object of this roofing tile is to form a perfectly weather-resisting roof, and be impervious to wind, rain, or snow, all points necessary for an efficient roof, and at the same time combine economy and ornamentation. By forming a groove and tenon joint on all four sides, the objection of the heavy overlap is avoided, and consequently the roof is lighter, and requires less timber. There are no less than eight works making them at present, and some large contracts for railway companies, public buildings, and roofing generally, have already been executed, and are on hand. These tiles will be shown at the Bath and West of England Show at Brighton.

A STAINED-GLASS window has been placed in St. Alban's Church, Cheetwood, in memory of the late Mr. Bold, chorister and sacristan of the church for several years. The window, which has been executed by Messrs. Clayton & Bell, of London, contains medallions illustrating the four canticles—"Te Deum," "Magnificat," "Benedictus," and "Nunc Dimittis."

ANOTHER three-light window, by Mayer & Co., of Munich, has just been erected in the parish church of Prestbury, Macclesfield. It

represents "The Good Samaritan," and is the third already executed by the same firm for this church.

WE are requested by the Secretary to the Royal National Hospital to state that on Ascension Day a painted three-light window, representing "Faith, Hope, and Charity," was unveiled in St. Luke's Chapel of the Royal National Hospital for Consumption, Ventnor, being the gift of Mr. Stafford Henry Northcote and family, in memory of the late Mrs. Northcote, who was a warm friend and benefactress of the hospital. The work was executed by Messrs. Heaton, Butler & Bayne, of Garrick Street, W.C.

A LARGE new east window, designed and executed by Messrs. Heaton, Butler & Bayne, of 14 Garrick Street, W.C., has just been placed in Willington Church, Bedford, for the Rev. Augustus Orlebar, which was opened by a dedication service, held by the Bishop of Ely after the confirmation on the 8th inst. One of the chief subscribers to this work was his grace the Duke of Bedford.

#### BEXHILL-ON-SEA DRAINAGE.

OUT of the nine schemes for drainage sent in some time back in competition, at the meeting of the above local board last week the plans of Messrs. Nichols & Sons (Birmingham) were selected on the grounds of economy mainly, and after considerable discussion. But on the report of Mr. Andrews, Borough Surveyor of Hastings, acting in conjunction with the board's surveyor, that the plans of Mr. H. C. Roper, C.E. (Dudley), contained many good and essential points, the board decided to offer 14*l.* for the retention of his plans, and the others to be returned with thanks for the trouble taken. The other competitors were Messrs. Davison & Sons (Windsor), J. B. Wall (Walbrook, London), Orchard & Van Putten (Lewisham), Lailey & Reade (Westminster), Francis & Robinson (Furnival's Inn), Cobbold (St. Albans), and Fowler (Manchester). No premium was offered, but several most elaborate and well considered plans were sent in

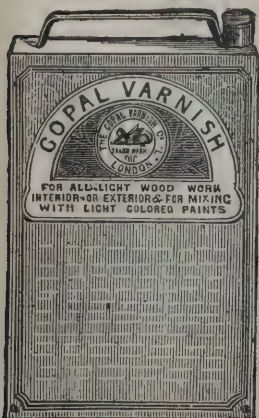
#### INVENTORS' INSTITUTE.

ON Monday evening—Mr. C. E. Spagnoletti in the chair—a paper on "Electric Tramscars" was read by Mr. A. Reckenzaun. After a comparison of horse, steam, and compressed air traction with electrical traction, the difference of the electric tramscars from electric tramways and railways was pointed out to be that, whereas in electric tramways the energy is conveyed from the generating station to the rails or other conductor communicating with the motor which turns the car-wheels, the electric car carries its own energy within itself, and is quite independent of external influence, and the car can travel over any road or rail for whatever system, ordinary or specially designed. For tramcar propulsion it is absolutely necessary that the motor should have high efficiency, and at the same time be of small dimensions and light weight. An improved machine of the author's had these qualifications. For the car there are two motors, each capable of working up to nearly nine horse-power, and weighing 420 lbs. Each motor is carried separately upon a small bogie, in such a way that each bogie forms a small locomotive engine, upon which the car rests. One axle of each bogie is a driving axle; thus are actuated four small driving wheels. The speed of the motors is high, about 1,000 revolutions per minute when the car is running at seven miles an hour. Thus it is necessary to introduce reducing gear between the motor shaft and the driving axle. The gearing employed is a worm on each motor shaft, and worm-wheels on the driving axles, giving a ratio of about one to twelve. This worm-gearing is cased in and the wheels work in oil, the lubrication being perfect. The variation of speed and power is obtained by means of a compound switch, which arranges the motor circuits so that the machines shall work in series, in parallel or singly; thus the resistance of the circuit being varied, the power and speed vary accordingly; when a greater range of speed is desirable, the motor-circuits are still further divided by

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arranging the field-magnet wires apart from the armatures. This obviates cumbersome gearing, which would add to the weight and the expense, increasing first cost and the maintenance as well. Brake-power, both mechanical and electrical, is efficiently applied. The most economical steam tramway locomotives burn from nine to eleven pounds of coal per mile. The coal for charging the electric tram-car batteries amounts to four pounds per indicated horse-power. Reckoning the coal at eighteen shillings per ton, the fuel per car-mile would be less than one penny.

### A LARGE ROOM.

NEW Brighton is within half an hour's run down the Mersey from Liverpool. Here pass all the great Atlantic steamers to and from America. The yellow sands stretch out for miles along the flat beach. The beacon, the battery, and the iron pier stretch out into the waters here and there and act as guide, defender, and friend to the stream of commerce and pleasure, so that as a rule visitors to Liverpool and Birkenhead have a run by steam-ferry down one of England's noblest rivers to look out upon the broad Atlantic from this little stronghold. Facing the ocean, commanding a splendid view, has been built the "Palace" and Winter Gardens, with salt water baths, covering an area of about three acres of land.

The principal room in the palace is used for entertainments, concerts, and dancing. It is only about this room, its size and construction, that we are now about to speak. The floor area of this room, with embayments, is nearly half an acre, being 198 feet long by 104 feet wide in the centre, and 25 feet high throughout. The walls are built in brick, with brick in cement piers, and the whole area is covered with a flat compound iron and concrete roof or floor, which averages 7 inches thick, having but 2 inches fall each way from the centre over the entire area, with a water outlet at the four corners. This roof and floor is carried upon cast-iron

columns in bays 30 feet 6 inches by 22 feet 6 inches, upon brick in cement piers about 16 feet below the floor level, upon a foundation of concrete below ebb tide. Over the 30 feet 6 inches span between column and column in the width of building, rolled compound rivetted girders, 2 feet deep, stretch from side to side, supporting 12-inch girders, which run the length of the room, and over all transversely are rolled joists, which are imbedded in concrete, finished with Seyssel's asphalt rock. This portion of the contract has been executed by Messrs. Homan & Rodgers, of Manchester and London, and the internal plastering of walls and ceilings by Messrs. Tanner & Son, of Liverpool.

A grand organ fills one end of the room, and the floor is laid with pitch-pine for dancing; the flat roof over—used for the same purpose and skating—is constructed to carry a moving weight of 2½ cwt. to the foot, and was tested before use with a slip gauge below, and some hundreds of weighted bags of sand on one bay, and a body of workmen. The deflection was 3-16th of an inch on the 22 feet 6 inch girders, which went back to the normal position after the weight was removed, and the whole has been thoroughly tested by crowds from time to time, without producing the slightest crack in the ceilings below.

From this room to the right are small concert halls, aviaries, grotto and other entertaining-rooms, and on the left is a magnificent promenade conservatory, 135 feet long by 59 feet 6 inches wide, filled with the most beautiful exotics, and surrounded with vineries, azalea and camellia houses, the whole being warmed with some 1,000 feet of hot-water pipes, forming a splendid adjunct to the great hall. These buildings have been executed under contract by Messrs. McKenzie & Moncur, of Edinburgh, and the cement floors and tile pavement by Mr. R. Lowe, of Farnworth. The dancing area is about one acre on floor and roof, and is brilliantly lighted at night by gas and electricity.

The whole has been designed and carried out under the personal superintendence of Mr. T. C. Ebby, architect, of Hamilton Street,

Birkenhead. Upwards of 60,000l. has been spent on the undertaking, and has proved a satisfactory and successful investment to the enterprising proprietor, Mr. Lawrence Connolly, of Liverpool.

### LIABILITY FOR PAYMENT.

A BUILDER of Radford, Mr. J. W. Priestley, has just sued, in the Nottingham County Court, the landlord of the Hand and Heart Inn for payment for work done at his house. Mr. Marriott appeared for the plaintiff, and Mr. W. Fraser represented the defendant. The case for the plaintiff, as stated by himself, was that in October 1883 the defendant instructed him to effect certain alterations to his premises—to alter the doors of the vaults, to put in a ventilator, and to carry out other work. He charged the defendant a reasonable sum, and furnished him with an account at Christmas 1883, and the defendant promised him payment. Some time subsequently, on asking the defendant to pay the account, the defendant asked him to separate the account, charging certain items in the account to the defendant and others to the Springwell Brewery Company, who are the owners of the house. The plaintiff complied with this request, but the Brewery Company denied their liability. He told the defendant of this, whereupon he said, "It is all bosh; I will get the money for you." Since then the plaintiff had applied to the defendant several times for payment, but had always been refused. The defence pleaded was that the defendant was merely the agent and servant of the Springwell Brewery Company, and that he had ordered the plaintiff to carry out the work by their instructions. Since then the company had gone into liquidation, but the Official Receiver had not scheduled the plaintiff among the list of creditors. His Honour said such a defence was too transparent for him to believe. It was a ludicrous and ridiculous tale. He gave a verdict for the plaintiff for the full amount claimed, with costs, in monthly instalments.

## ARTISTIC ♦ VENTILATION. ❀❀❀



## SHARP & CO., Hygienic and Hydraulic Engineers.

### TESTIMONIAL

From WALTER REID, Esq., M.D., &c. (who conducted TESTS for GOVERNMENT).

"GENTLEMEN,

"I have completed experiments with your Ventilator. I consider it a most effective Ventilator.

"Yours truly,

"November 11, 1881.

(Signed) WALTER REID."

Speciality: "CONTINUOUS" System of House-Drain Ventilation, Up- and Down-Cast Ventilators, to suit every style of Architecture.

HYDRAULIC RAMS (FYFE'S PATENT) AND SANITARY APPLIANCES.

Health Exhibition Awards:—1 GOLD, 1 SILVER, 4 BRONZE MEDALS.

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IN EXTENSIVE USE FOR RAILWAY STATIONS, MILLS, &c.  
NO OTHER GLAZING CAN BE WARRANTED INDESTRUCTIBLE.

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PRUDENTIAL WORKS, Greville Street, Holborn, E.C., at the rear of the Prudential Life Assurance Company.  
SHOP AND OFFICE FITTERS, EXHIBITION STANDS, AND CABINET WORK.



# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.

# VENTILATION

# WITHOUT DRAUGHT.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

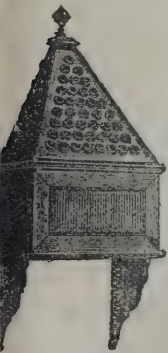
"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."

## THE "HARDING" VENTILATING COMPANY,

30 EAST PARADE, LEEDS.

### HARDINGS' PATENT AIR DIFFUSER

FOR VENTILATING ALL KINDS OF BUILDINGS.

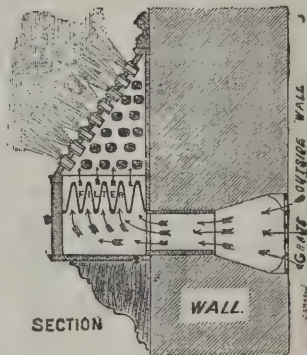


Diffuser with Filter.

Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus, we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



SECTION

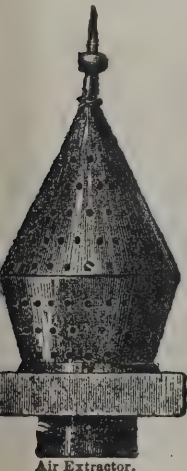
WALL.

**CHURCH WALL VENTILATOR.**—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

**OUR PATENT EXTRACTOR** is the best in the Market, and is supplied at a very much lower price than any other.

**CHURCH WINDOW VENTILATOR.**—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.

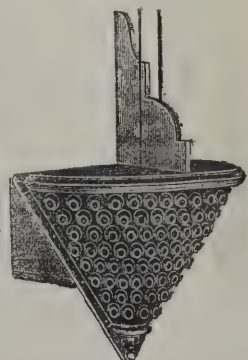


Air Extractor.

"Armley, Leeds, Oct. 29, 1883.

"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.



A reduction in price is made where a number of Diffusers is required.

Estimates and further information given on application to the "HARDING" VENTILATING CO., 30 East Parade, Leeds.



# "THE PEDESTAL VASE," JENNINGS' IMPROVED W.C. APPARATUS

(Combination Urinal and Slop Sink).

Registered No. 16,300.



A PORCELAIN VASE set on a tiled or mosaic floor, within walls or a dado of glazed tiles. The usual wood framing, forming a storehouse for the retention and accumulation of *damp*, *dirt*, and *disease germs*, with the joints, crevices, and imperfections in work which the closet enclosure so often conceals, is entirely abolished. The seat is hinged, permitting free access for use as a *slop sink* or *urinal*, and for cleansing, so that the entire apparatus and space can be freely washed down. For this latter purpose the floor should be slightly sunk, and laid to fall to a grating, with waste carried through the external wall, and terminating in a copper flap valve to prevent draught.

The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with "**JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN**" 5 feet over, with  $1\frac{1}{2}$  inch down pipe, ten apples (averaging  $1\frac{1}{4}$  inch diameter) and a flat sponge about  $4\frac{1}{2}$  inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

**GOLD MEDAL AWARDED.**

THESE CLOSETS are already in use in Hospitals, Banks, Hotels, Offices, Private Residences, &c., with most satisfactory results, and, fixed in the manner described, in appearance and action leave nothing to be desired. By the novel arrangement of the supply to Basin, as shown in the sectional sketch annexed, the whole surface is well flushed and cleansed, whilst the bottom of Basin and Trap are thoroughly scoured by a concentrated rush of water which insures the **instantaneous removal** of the contents, thus overcoming the inherent defects in the many imitations recently produced of "**JENNINGS' MONKEY-CLOSET**" (the original form of wash-out watercloset), which was invented and patented by G. J. in 1852.

## GEORGE JENNINGS,

### SANITARY ENGINEER, STANGATE, LONDON.

A VISIT TO THE SHOWROOMS IS RESPECTFULLY REQUESTED.

S.E.

# "THE BANQUET."

Owing to the great and continuous demand for

"The Banquet,"

BY

HENRY STACY MARKS, ESQ., R.A.,

This elegant and artistic Chromo-lithograph (size 39 inches by 15 inches) has been reprinted, and can now be had at the

OFFICE: 175 STRAND, LONDON, W.C.

PRICE ONE SHILLING; OR BY POST, 1s. 3d.



# The Architect.

## THE WEEK.

THE immense work which is the only contribution of M. GEORGES CLAIRIN to this year's Salon should be secured if possible for exhibition in one of the Bond Street galleries, for it is the most remarkable picture of the year. It is called *After the Victory*, and represents the display of captives, trophies, and treasures before the Moorish king outside the Alhambra. The dimensions are about 30 feet by 23 feet, and it is not surprising to find that the painter's outlay on materials and assistance has been over 500*l*. The canvas and stretching have cost 100 francs; the comparatively simple frame cost nearly 2,000 francs; and the models, who were paid at the rate of 10 francs a day, came to a similar sum. It is calculated that between 150 and 200 tubes of white were used, costing 3 francs each; the ultramarines and other blues have cost on an average from 18 to 20 francs per tube, while for some of the yellows 30 francs had to be paid. Fortunately for the painter's purse browns and blacks cost no more than 3 francs a tube. Several assistants had to be employed at the rate of from 10 to 15 francs a day, and their expenses amounted to 3,600 francs. A picture of this kind is sure to find its way to one of the public galleries in France, but it would be well if it could be seen in England. It displays the great versatility of M. CLAIRIN, whose charming figure of *Frou-Frou* is known in London by means of photography.

How or by whom the injuries were done to the pictures at the Royal Academy still remains a mystery, and various explanations are offered besides that of wanton malice; and it has been suggested that the damage may have been done in dusting the works with feather brushes that have become worn. Mr. THOMAS FAED, R.A., says:—"The senseless and malicious scratching of pictures at the Royal Academy commenced long before the rooms were open to the public. My picture in the second room was frightfully disfigured in the face even before 'the royal private view.' On the morning of that day I spent a couple of hours on its restoration. I visited the room since, and found that another attack had been made on it, the feet and part of the dress suffering this time. My picture *When the Children are Asleep* has also suffered terribly." It is curious, however, that the culprit could have done his work without detection. To leave his mark on one or two would not have been easy if any supervision at all worth the name is practised. A curious circumstance is pointed out by a correspondent, that having narrowly watched the visitors on May 13, he was surprised that not one in the gallery, whether visitor or attendant, appeared cognisant of the scratches, and when the matter was mentioned to an attendant it was evidently news to him. It is too soon, perhaps, to ascribe the work to malice, and even if the explanations—such as that the cat did it, &c., or that the attendants in caretaking did it unwittingly—are untenable, still, short of evidence to the contrary, it will be difficult to avoid thinking it must be the work of a monomaniac or lunatic.

A QUESTION has been raised in the Chancery Division of the High Court of Justice, whether bequests to trustees of an art collection of the late Sir T. C. HOLBURNE, and funds for the endowment of an art museum for Bath contained in a codicil of the late Miss MARY ANNE BARBARA HOLBURNE, executed three days before her death, were invalid, as being private trusts void for uncertainty, and also infringing the rule against perpetuities; or, if valid on the ground that they constituted a charity, whether they were not still invalid as offending against the provisions of the Mortmain Act prohibiting testamentary dispositions of land, or such as involve the acquisition of land. Correspondence showed that the late Miss HOLBURNE had during her lifetime contemplated buying Sydney House, Bath, for the purposes of a "Holburne Museum," and endowing it with 10,000*l*., but the negotiations fell through.

Mr. Justice CHITTY decided on the validity of the gifts, which could, he said, be supported as being charitable bequests. A public purpose of general utility, to the exclusion of private business, was obviously intended by the testatrix, as was shown by the correspondence. It was intended that the museum should be in Bath, and for that city, and kept there. Also, the gifts did not necessarily imply the purchase of a house, for the testatrix seemed to have successfully avoided using any language which would justify any such conclusion. It would be no breach of trust for the trustees to hire a room in which to have the collection in proper and careful custody.

WHEN M. BOUGUEREAU, the painter, announced the death of VICTOR HUGO to the Académie des Beaux-Arts, he had also to announce the loss of another eminent member, M. BALLU, the architect. Perhaps we ought to say architect and painter, for in 1846 THEODORE BALLU obtained one of the medals of the Salon for his paintings. He was an example of a French architect who followed the usual course of practice. A student of the Ecole des Beaux-Arts, he obtained the Prix de Rome in 1840, and in course of time the customary honours followed, until in 1872 he obtained one of the coveted chairs of the Institute. M. BALLU was not a man of one style. The fourteenth-century church of Ste.-Clotilde was designed by him in connection with M. GAU, as well as La Trinité, which is in very advanced Renaissance.

THE funeral of VICTOR HUGO promises to be one of the most imposing ceremonies seen of late years in Paris. There is little or no difference of opinion on the subject, and it may be said that all France is prepared to unite in paying homage to the remains of the greatest of her writers in this century. Never before were so many orders given for floral wreaths. On the Boulevards there is a show of the more expensive wreaths, but in back streets one can also see some of a less costly kind, which have been prepared for humble trade societies and political clubs. The preparations for the public funeral have largely increased the onerous duties of M. ALPHAUD, the architect, who is the chief director of works in the city. It was a happy thought to fix on the Arc de l'Etoile as a temporary shrine for the remains prior to the funeral, and the triumphal arch seems so appropriate for such a purpose that it will no doubt be hereafter used. The avenues of the Champs Elysées, which converge on the structure, allow of the representatives of all the public bodies, learned and political institutions, and deputations from the provinces, to take position, while the long and straight course of the principal avenue will afford a means to display the magnificence of the procession. The openings of the triumphal arch will be draped with black cloth curtains, and in the central part a catafalque 80 feet high will be raised. At each angle will be an enormous "banderole," and around the arch will be thirty-two high braziers, containing a greenish fire. The name of M. ALPHAUD is a guarantee of the becoming style in which the works will be carried out.

UNDER the presidency of the Duke of NORFOLK, E.M., the 42nd annual congress of the British Archaeological Association has been fixed to take place at Brighton on the 17th of August next and following days to the 24th inclusive. By the kindness of the Mayor and Corporation of Brighton some of the principal municipal rooms of the Pavilion have been placed at the disposal of the association during the week's proceedings, and with excursions to Arundel, Chichester, Goodwood, Cowdray, Bognor, Boxgrove, Worthing, Bosham, Wiston, Steyning, Bramber Castle, Amberley Castle, Hollingbury Copse, and other places of interest in South Sussex, there is little doubt but that such a meeting will prove a very successful and instructive one. There will be the usual extra days arranged for the following week, and which will probably include excursions to Lewes, Seaford, Eastbourne, for Hurstmonceaux Castle, Pevensey Castle, and Hastings; a visit, it is also expected, will be made from Newhaven to Dieppe, under the auspices of the Leland Club, thus forming the second excursion to France of that newly-formed antiquarian body.



## RAPHAEL.\*

THE first volume of the new life of RAPHAEL, by MESSRS. CROWE and CAVALCASELLE, narrated the history of the painter up to the time of his arrival in Rome, when, as they said, the world saw "a youth of twenty-three suddenly elevated to the highest rank in the hierarchy of his guild, in whose favour all the oldest and best-tried craftsmen of the Italian peninsula were unceremoniously turned out and sent about their business." The second volume treats of the remaining fifteen years of the artist's life. The advantage of the plan adopted by the authors becomes, if possible, more evident in the continuation of the work. There is little to be discovered about the man RAPHAEL beyond what has been already made known, and it is better to give more prominence to those works which in reality form the story of his life. MESSRS. CROWE and CAVALCASELLE take up his pictures one after the other, and not only tell us all that can be ascertained about the commissions, but they endeavour, with the aid of their unrivalled knowledge of Italian art, to trace the sources from whence RAPHAEL obtained inspiration. He was endowed with marvellous receptivity, and his skill in assimilation was like instinct. With all his genius, it was not possible for him to work out one of his great works unaided. No man could have less resemblance to the *pittori improvvisatori*. Figures by contemporaries, or which had been fashioned by Greek hands, impressed themselves on his mind, and were produced in forms that differed more or less from the originals. REYNOLDS pointed out that when RAPHAEL was designing the cartoons he made use of studies from MASACCIO. Two figures of St. PAUL are copied, but with the material addition of left hands, which were not seen in the originals. A figure of the Pro-consul is taken from the same artist's FELIX, but in one case we see a figure in profile, while the other is a front figure. The President justified the imitation on the ground that "men of superior talents alone are capable of using and adapting other men's minds to their own purposes." Following REYNOLDS, MESSRS. CROWE and CAVALCASELLE have tracked RAPHAEL throughout his career. Knowing that he utilised existing works habitually, they endeavour to ascertain what they were, and then they explain the transforming process. It would have been an invaluable advantage if illustrations could be given to suggest the relations between the various works, but the expense was, we suppose, an impediment that could not be overcome.

When RAPHAEL came to Rome in 1508, MICHEL ANGELO had undertaken the painting of the Sistine Chapel. An army of artists congregated about the Vatican, and it is not surprising that the young painter who required so many assistants was pitted against the great sculptor who was forced to attempt frescoes, and who cared little for assistants or pupils. BRAMANTE was a power in the place, and was known to favour his friend from Urbino, while he was, like so many, in collision with MICHEL ANGELO. Whispering tongues can poison truth, and the sculptor was induced to believe that he was envied by the two friends. He was not a man to remove differences by a gentle demeanour; but he could hardly fail to render a fair measure of justice to RAPHAEL's deserts, although he might be saddened by the conviction that there was a conspiracy to supplant him. The two men lived estranged, and apparently no endeavour was made by either of them or by their friends to bring about a better state of things.

RAPHAEL began with the Camera della Segnatura in the Vatican. His trial pieces were the allegories on the ceiling, although, as MESSRS. CROWE and CAVALCASELLE point out, the logical sequence should have been different. The *Disputa* came after the *Theology*, and the *Philosophy* preceded the *School of Athens*. In the personifications of the virtues and sciences, the composite nature of RAPHAEL's thought is apparent, for "*Theology* recalls Perugia and Florence; *Poetry*, MICHEL ANGELO, Perugia, and the Antique; *Justice* is Umbrian, *Philosophy* Classic." It is plain that the influence of PERUGINO was waning in his pupil's mind, and had been superseded by FRA BARTOLOMEO and DA VINCI. The success of the frescoes was undoubted;

but many artists have agreed with REYNOLDS that the first impression received from them is rather disappointing. The latest biographers, who are never carried away by idolatry, acknowledge that they also have shared in that feeling. "At the first glance," they say, "the venerable remains of RAPHAEL'S frescoes produce a feeling of awe rather than a clear sense of pleasure. There is a hoar of age covering the pictures which conceals in some measure the grandeur and perfection of the work which they embody. But when the eye has become accustomed to this hoar, the first impression of disappointment wears off."

The grandest of all the works in the Camera is the *School of Athens*, and the importance which is given to the architectural framing indicates the relation of BRAMANTE to the painter. It is commonly said that the architect furnished the background, but MESSRS. CROWE and CAVALCASELLE go further, for they believe that BRAMANTE'S influence over RAPHAEL was that of a master in all branches of art. Not only did he advise his countrymen in the selection of ancient models, but he prepared sections of men and horses for his use; afterwards they were adopted as a sort of canon by artists. The mixture of classical and religious subjects in the paintings may at first sight appear incongruous, but the Pope no doubt looked upon himself as the successor of the emperors as well as of the apostle, and the Church always regarded the old fables of mythology with kindly feelings. Parnassus was more than the name of a hill to the cardinals, and RAPHAEL understood their thoughts when he painted APOLLO, and made the god appear to play on his fiddle with the satisfied air of a musician who knew that his audience was made up of friends. We are told that there is no classical statue which corresponds with the figure, and a Greek would hardly think it possible that the god could be so much at his ease. It is less difficult to discover the origin of some of the remaining figures in the *Parnassus*. CALLIOPE, for example, appears to have been derived from the *Apotheosis of Homer*, a relief of which a replica is to be found in the British Museum. RAPHAEL required only thirty months to carry out the whole of his great pictures in the Camera della Segnatura, but although every figure was designed by him, he was assisted in the painting. For the colossal works in the Sistine Chapel four years and a half sufficed, and we may well say there were giants in those days. In the case of RAPHAEL there is the disadvantage that the assistants did not always lose their individuality. Hence so noble a work as the *Heliodorus* manifests two styles. GIULIO ROMANO was the better draughtsman, while GIOVANNI DA UDINE was a Venetian in dealing with colour.

During five years RAPHAEL was painting according to the instructions of JULIUS II., but the accession of LEO X. was the beginning of a new era. MICHEL ANGELO was monopolised by the monument of the late Pope, and his competition was therefore weakened. BRAMANTE was growing feeble, and the vision that arose before RAPHAEL was that of controller of all the Vatican works. People who wish to make little of architecture, or rather of architects, sometimes descant on the ease with which Italian painters and sculptors undertook works of building. RAPHAEL is selected as a notable example. In the backgrounds of his pictures we see graceful architectural details, and the skill that was requisite to produce them was even in the sixteenth century supposed to be a guarantee of constructive power. It is true that RAPHAEL was entrusted with important works, but no advantage was derived by his patrons from the employment of a fashionable painter as a superintendent of building, and it is our firm conviction that the burthen of a task for which he was entirely unqualified hastened the death of the artist. It may be well to recall the circumstances to the minds of our readers.

RAPHAEL was a fellow-countryman of BRAMANTE LAZZARI, and it is supposed that the painter was brought to Rome at his suggestion. It was from the architect, as we have said, that the background of the *School of Athens* was derived, and his figure in the painting, with PERUGINO and RAPHAEL as attendants, is suggestive of the indebtedness of the two men to him. MICHEL ANGELO said that BRAMANTE was the greatest architect of the Renaissance, but between them there was little friendship. There is a tradition that the architect clandestinely introduced RAPHAEL to the Sistine Chapel to see the pictures, for the purpose

\* *Raphael: His Life and Works*. By J. A. Crowe and C. B. Cavalcaselle. Vol. II. John Murray.



of taking hints from them while they were in progress, and it seems to be probable enough. When BRAMANTE felt that his strength was declining and that his hands were too palsied to hold a pencil, he applied for coadjutors in the works at St. Peter's, and selected his rival SAN GALLO and FRA GIOCONDO, the Dominican friar. They were old men (one was seventy-one, while the other was ten years older), and it was plainly his desire that they were only to hold his office until his countryman should be competent to take possession of it. BRAMANTE died in March 1514, and with his last breath he declared to the Pope that RAPHAEL alone was competent to be his successor. The recommendation prevailed, for we know from the letter which the painter wrote to his uncle four months afterwards that he was then in BRAMANTE'S place. He mentions FRA GIOCONDO as his colleague, and says, "I shall learn from him whatever secrets he may possess, and thus I hope to become perfect in architecture." But supposing the ancient friar was too astute to allow his knowledge to be wormed from him by an amateur who did not even belong to his order? FRA GIOCONDO had devoted his long life to the study and practice of architecture, and he must have felt that it would be absurd to expect him to teach a young and busy painter the art and mystery in a short course of easy lessons. The master key was to be found in VITRUVIUS, and what could be expected from a pupil who was unable to read a Latin book?

In the work before us it is said that FRA GIOCONDO died in 1515, but he appears to have been living in 1517, when he published a new edition of "Cæsar" with a design to illustrate the bridge over the Rhine; and the manuscript found by FRA PUNGILEONI states that in 1518 the friar was receiving 25 ducats a month for his services at St. Peter's, a similar amount being received by RAPHAEL, while SAN GALLO had only 15 ducats. We think it may be concluded that the responsibility for the works was shared by the friar for more than a year. RAPHAEL'S greatest feat was the proposal to abandon BRAMANTE'S plan of St. Peter's, and to substitute a Latin for a Greek cross. For a time it is evident that he was absorbed by architecture; but Messrs. CROWE and CAVALCASELLE in the following passage suggest the doubts which beset the student when one seeks RAPHAEL'S buildings:—

When we strive to detect what Raphael produced as an architect we get upon difficult and perplexing ground. Vasari himself is obviously puzzled to define what Raphael accomplished. In some places he speaks of architectural designs furnished "at the Villa Madama and at palaces in the Borgo," and amongst the edifices which he particularly mentions is the palace of Giovanni Battista dell' Aquila. In other places he speaks of "designs sketched" for San Giovanni of the Florentines at Rome, San Lorenzo and the Palazzo Pandolfini at Florence. In a third series of passages Raphael is described as "ordering" the architecture of the Chigi stables at the Farnesina, and the chapel of the Chigi in Santa Maria del Popolo at Rome. To interpret the first of these forms of expression in Vasari, the buildings to which he alludes should be visible. They have, unfortunately, perished with the exception of the Villa Madama. It is curious that all the drawings for that villa in the Uffizi are made to scale by Antonio da San Gallo, and the only share which can be assigned to Raphael would be that of a general sketch such as his fancy might evolve and a clever assistant work out. The second form includes one doubtful success and two failures. Raphael's designs for the churches of San Giovanni of the Florentines and San Lorenzo were not accepted. That of the Pandolfini Palace, though full of grandeur, was not begun till after Raphael's death. An interesting passage in Agostino Chigi's will refers to the chapel of the Popolo, which was still unfinished at the banker's death, but was to receive completion according to an arrangement or *ordinatio* previously determined by the testator, and of which Raphael and Magister Antonio da San Marino were fully informed. The word *ordinatio* closely resembles Vasari's "*ordine*." It appears to suggest some species of decoration, as well as the building of an edifice. It is therefore a question whether Raphael planned the Chigi Chapel at the Popolo, or only suggested its internal adornment.

RAPHAEL tampered with BRAMANTE'S construction with as much hardihood as he altered the plan of St. Peter's. He added a third storey to the Loggie in the Vatican, and it was only by closing the openings in the lower storey that the structure was saved from destruction. But he was still ambitious to be esteemed as a many-sided man, and the fear of other failures haunted him and depressed his mind. There

is a remarkable letter addressed to the Duke of FERRARA by his agent in Rome, who was endeavouring to obtain a picture from the painter which he had undertaken. "The matter of RAPHAEL is still unsettled," he writes, "I shall attend to it, but first mean to try kind measures, for men of this excellence all suffer from melancholy, and RAPHAEL the more because he clings to this question of architecture and does the BRAMANTE, and would like to take the art out of the hands of GIULIANO LENO." The latter was a sort of factor or administrator of the works at St. Peter's, and it is evident that the painter wished to have control of every department—financial, artistic, and constructive. In truth RAPHAEL assumed a load that, like WOLSEY'S, was enough to sink a navy, and it is not surprising that he sank beneath it. His fate should be taken as a warning by amateur architects.

In contrast with RAPHAEL'S eagerness to strut as an architect is his sensible conduct in respect to sculpture. Every one who has seen the group of the dead boy borne by the dolphin, forming part of Sir HARVEY BRUCE'S collection, and which tradition has ascribed to RAPHAEL, would say that it was a creditable work. Messrs. CROWE and CAVALCASELLE believe that it was not a work by his hand, but an attempt to realise one of his designs. It has the characteristics of the master, and it suggests that RAPHAEL could have works produced in marble which, if wanting in grandeur, would at least be pleasing. MICHEL ANGELO was warned of RAPHAEL'S efforts to model figures, and knowing that his own works were not appreciated, he may have been irritated at the thought of prettiness over-coming the sublime. But RAPHAEL'S good sense controlled his ambition, and not more than a few figures are associated with his name. He recognised his limitations. In architecture it was otherwise, for he hoped to outstrip his contemporaries. He told CASTIGLIONE that he was not satisfied with producing a model which insured the approval of the Pope. "I aspire," he said, "to something more. I am desirous of finding out the beautiful forms of the ancient buildings. I do not know whether my soaring will be that of ICARUS." But the ancient secrets are not to be discovered so easily, as RAPHAEL, like many an amateur before and since his time, discovered when it was too late.

The works of RAPHAEL in which we can take most interest are the cartoons, although it must be said that the gallery containing them is generally the most deserted by the visitors to the South Kensington Museum. For our readers they should have additional interest, for they owe their origin to builders. The works at St. Peter's were delayed, and the masters of ceremonies were distracted in endeavouring to conduct grand services and pageants in a temporary building and surrounded by scaffolding. The happy thought struck one of the officials that the Sistine Chapel should be used on those occasions instead of the basilica, and that instead of the gaudy hangings which are still used abroad, the walls should be draped with tapestry. A commission was given for ten designs (some say eleven), of which we have seven in London. The cartoons have been a theme for so many dissertations it is difficult to say anything that is new about them. Messrs. CROWE and CAVALCASELLE analyse the figures with care, and the following extract will suggest the breadth of view with which the process is undertaken:—

Raphael's cartoons are the mature fruit of the studies of a lifetime. They mark the close of a brilliant period of Italian art, which opened with Giotto, and includes Masaccio, Ghirlandaio, and Leonardo. Unlike the ceiling of the Sistine, which is an incomparable result of Michel Angelo's individual striving, it distinguishes Raphael from his rival by showing that originality could be attained by a judicious study of extant masterpieces controlled by repeated appeals to nature. Each picture in the series displays the highest possible skill in composition. Where action is required, it forms a material element in the arrangement; where it is not required, its place is taken by variety of expression or contrasts of movement and position. No general or inviolable rule is applied without exception. The subject dictates the form best suited for its display; and the narrative is never obscured, however complex the motive idea of the picture may be. Attitude and gesture, always elevated and pure in accent, yet full of modulations, constantly remain within the limits of reality. The type, the strain, or the turn of expression may differ, but the design invariably comes out without a blemish. With an intense concentration of life and dramatic force, every sentiment, every passion is manifested,



and this applies with equal facility, and regardless of beauty or ugliness, to childhood, manhood, or age. It was a condition precedent that Raphael should have studied nature in its best models and the antique in its most ideal shape, and assimilated all the materials which that study afforded before he poured forth the treasures which he had laid up. That his pictures sometimes recalled the Classic Greek and Roman, Masaccio, Filippino, Leonardo, and even Michel Angelo, was the necessary consequence of his method. But these reminiscences never clouded work individual in stamp and Raphaelic in impress. It is in the cartoons, and in these only, that Raphael created a type of the divinity of Christ, which gives him a place in the annals of art on a level with Da Vinci. For, whilst Da Vinci produced the Saviour in the highest form of serenity as the God-man who knew that He was betrayed and about to suffer, Raphael gave shape to a form of equal grandeur and majesty in the Saviour of the Resurrection. The shapes of the Apostles were wrought with a power and clothed in a halo of dignity and sanctity never before attained, and only surpassed by that of Christ Himself. Descending from these, perhaps, too lofty contemplations to the commoner elements of Raphael's art, we acknowledge equally his great skill in bringing freshly before us a world then sixteen centuries old, a result which was compassed not only by a finished definition and rendering of nude in every detail of contour or play of muscles and articulations, but by a thorough mastery of the models of antiquity. With this the most delicate and exquisite sense of chords of colour and balanced light and shade were combined, and the harmony of a style in all its parts established.

Here we must stop. In conclusion we recommend the two volumes to all students of art history who care for careful research and just conclusions about the works of one of the greatest of those artists who were given as a blessing to humanity.

## NOTES ON SOME ENGLISH CATHEDRALS.

[BY A CORRESPONDENT.]

**W**INCHESTER Cathedral is an admirable example of vigorous architecture carried out in the Perpendicular style. For the solidity of the features of the cased Norman work does not injure the Perpendicular detail, which is equally adapted for bold treatment or for the most delicate handling, as may be seen in the case of the tabernacle-work ornamentation to the grand old altar screen. This adaptability is a characteristic of Perpendicular architecture which is not generally sufficiently realised. The very great thickness of the aisle walls should be observed, which has afforded the opportunity of moulding the window jambs and mullions as well as contriving deep reveals internally. Although the capitals and the mouldings thereto of the nave arcade are delicate in scale, the arches possess mouldings which are, on the contrary, bolder and much larger in proportion. Yet the general effect is pleasing. In the choir, however, the mouldings to both the capitals and arcade are of about the same scale. It would be difficult to equal the simple grandeur of the severe massive Norman work in the north transept. In the beautiful tomb of Bishop WILBERFORCE, designed by the late Sir GILBERT SCOTT, there is one architectural detail that seems out of place and un-English. I allude to the twisted shafts which have been borrowed from North Italian Gothic work. In the new oak screen to the choir (almost a replica of the choir stalls) the want is felt of a distinct horizontal line behind the canopies, &c. It is surprising what an amount of delicate fine ornamentation can be piled on without appearing redundant in such an elaborate screen as this. What can be better than the work to these beautiful stalls? The ornamental forms being simple trefoiled heads, cinque-foils, &c., are at least quite as effective as the more complicated details of later architecture.

Externally, the lowness of the central tower is scarcely pleasing. It is to be hoped that some day what was doubtless the original design of the Norman builders may be carried out, namely, a pyramidal roof of timber covered with lead. This addition would aid much in expressing the desirable element of height. Such a feature was suggested some years since in the case of another great Hampshire church, that at Romsey, where there is also a low central Norman tower, at present surmounted by an incongruous-looking turret of comparatively modern date. It is hardly

possible to quit Winchester without saying a word about St. Cross, now practically a suburb of that city. Whatever plan of church has been, is, or will be adopted, it is difficult to imagine anything superior to the cruciform for both external and internal effect, and in our modern churches we rather suffer from being unable conscientiously (as regards the adaptation to the ritual of the English communion) to follow out that type. At St. Cross, as at Winchester Cathedral and numberless other old churches, one can revel in the charms of thick walls, and when the bright sun pours in, watch it playing on the long deep splays of the interior of the windows. The broadly-splayed window recesses, and the very redundancy of strength in these old walls, become suggestive of reserve of power, and are most impressive.

Exeter Cathedral is a good specimen of a Mediæval structure that is well adapted to the services of the Church of England. The nave and choir can be used for worship separately or together, except for the Holy Communion, as there is only one altar. Both, however, contain proper choir-seat arrangements.

It is pleasant in these days, when there is so much materialism, to see such a poetical conception of sculpture to a pulpit as in that to the nave of this cathedral. In the *Times* of October 19, 1877, it is thus described:—"Between figures of ST. PAUL, ST. JOHN THE BAPTIST, and ST. STEPHEN are sculptured panels of which that in the front represents the body of the martyred bishop (Bishop PATTESON, a Devon man) carried by three natives to the boat in which it was found. The northern panel has the martyrdom of ST. ALBAN; the southern, the departure of ST. BONIFACE (a native of Devonshire) on his mission to Germany. The body of Bishop PATTESON is shown wrapped in a mat of palm fibres, and, as it appears, the palm branch, with its five knots, is supposed to indicate the murder of five natives avenged by that of the bishop." Both in this pulpit and in that at Salisbury shafts are set centrally under the steps, thus leaving the space beneath comparatively open—a great advantage when interruption to view is undesirable. At Salisbury the hand-rail is fixed on the side next the nave pier, near which the pulpit is placed, to be as little conspicuous as possible. As a rule, the balustrade to a pulpit staircase is not a pretty object, however ornamented, and, except in high pulpits, its absence is to be commended. Where there is no handrail, good solid stone steps with a wall under them, and a slightly raised coping, to give the idea of security, are to be recommended. The tracery to the windows of the choir and choir-aisles at Exeter is superior in design to that of the nave and nave aisles. It is also of earlier date than the latter. We do not find here the rigid, straight lines at oblique angles, or spiky forms, but more harmoniously composed outlines, portions of circles, &c. I am not comparing the vertical and horizontal lines with curved ones, for I think that in some windows of the Perpendicular period there are admirable examples of the consistent treatment of stone. I am rather alluding to the eccentric form of tracery sometimes found in late Geometric Decorated work.

The piercing of the old organ screen, and the treatment of the backs of the "return" stalls, which are left apparently quite open, with a perforated stone screen behind them, appears to me very successful. A little of the solid effect obtained by the dark oak backs to the stalls is missed, and if one is disposed to be hypercritical it may be said that it was scarcely worth while to go to all this trouble and expense of canopies and yet leave them open for draughts behind. I believe, however, the latter objection is met by plate-glass, as in several other apparently perforated screens, at Wells Cathedral, for example, and elsewhere—a pious and harmless deception. In exchange for the shadow of the overhanging canopies is a greater lightness and a softening down of the shade. The late Sir GILBERT SCOTT generally moved with the times, and at Exeter endeavoured to adapt the Mediæval treatment to modern requirements, so that the worshippers in the choir aisles might really take part in the services. The old Renaissance organ-case, of the date A.D. 1665, is really not out of harmony with the Gothic surroundings. There are a number of obviously sham pipes, small and great, to the front; but there seems no harm in these: they are but suggestive of the real pipes



inside, which, if visible, would look ugly. In the furniture it can be seen that everything has been designed by the architect, and very little of the designing has been left to the modern metal-worker. The old pendants, though not exactly Gothic, and the ornament of which mainly consists of simple twists (after all, the most natural treatment of metal-work), are excellent; the candelabra standards within the brass altar-rails are almost Italian in feeling. It is at any rate an advantage that all the choir-lighting arrangements are for candles not for gas. In a cathedral one does not want or expect the glare of a theatre or concert-room. All that is requisite is that the lighting shall not look paltry, and that it is sufficient for people to read easily. Candles are more costly, but in a cathedral where thousands have been spent in enrichments, that objection ought to be immaterial. The reredos, delicately gilded and enriched by coloured marbles, has just a sufficient tone of colour to suit the eastern end of this grand old building, while the exquisitely worked altar frontal is a very fine specimen of the embroiderers' art. As far as the effect of the sculpture to the reredos is concerned, I think it would be an improvement if the field or ground was gilded in some flat manner to throw up the figures better.

It is a pleasure to the thoughtful architectural student or inquirer to find all the fittings of the choir so carefully looked after even to the minutest detail. I regret, however, to make one exception—the flimsy-looking metal grilles at each end of the reredos which are gilded and coloured a very crude blue.

The carved convex ornament, an amplification of the four-leaved Decorated flower in the west central doorway, gives one the idea that it has been worked in separate pieces and fixed in afterwards. This is actually the case at Wells Cathedral in the west front, where some of the delicate carving and figures to the arch mouldings of the doorways are in white lias, the general work being of Douling stone. If executed in one solid stone it must have been very laborious to carve, though very effective when done.

The litany desk, at Exeter, is for the use of two minor canons to chant together, an old custom kept up in some cathedrals. This makes it more important and larger than the usual litany desk for one clergyman. How much more agreeable is the contrast here in the nave arcade piers, where the bluish-grey, unpolished stone is in combination with the Beer freestone, than in the case of Salisbury Cathedral. The low, octagonal pedestal, with a broad, flat ledge on the top, sufficiently wide to permit of its being made use of as a bench if wanted, on which the clustered nave piers rest, is a pleasing feature. Above are the bold vaulting ribs, with the beautiful reddish and bluish-brown filling-in to the cells, mottled in much variety. For a combination of self-coloured, natural materials, harmonising well together, I scarcely know a better example. Restoration is often condemned, but this bringing back of the tinting to its original state is a wonderful improvement in this instance.

#### PARTRISHAW CHURCH.\*

F. R. KEMPSON, F.R.I.B.A.

PARTRISHAW has, I believe, been described as a late church, not earlier than the fifteenth century; but when speaking of a little chapel or Bettws in a mountain district, it is, I think, by no means safe to say that it must be a late one, simply because no early architectural features have yet been acknowledged to exist in main structure. Such features are, in little churches among the mountains, not unfrequently conspicuous for their absence or lie hid for centuries. Many such churches and chapels—built, I believe, at quite an early date—possess no mouldings or architectural features in the main structure from which the date can be definitely determined. Such early churches had mere slits in the walls for light, and these have been enlarged and made into windows. I see nothing here to prove that the nave at least is not Norman, with late windows introduced, and I am inclined to think it is so. The nave has very remarkable fine stone quoins; the one at the south-west angle batters inwards on both faces, and the wall has a fine "spur base." These features are quite charac-

teristic of very early work. On the south side of the nave is a small square-headed window, set high to light the rood loft. The chamfered head of this window is rounded off into the jamb in an unusual manner, as is also the sill. It is worth examination. The jambs may have been those of an earlier window. In the west wall of the nave, to the north of the western chapel, is another square-headed labelled window with jambs of a hollow section; this is a late window. There is an ugly square-headed window in the south wall of the nave to the west of the porch, the head of which should be examined; it looks as if it might have been the head of an early two-light window from which the mullion and centre part has been cut away. The large three-light window on the south side of the nave is characteristic of the same period as the roodscreen and loft, as is also the window with two lights in the east end of the chancel, which has carved terminations to the hood mould. There are two square-headed windows and a priest's door in the south wall of the chancel, and two brackets in the east wall, which are very small and low for figures. They may be the corbels that carried a credence slab.

The porch, which is on the south side of the nave, is very plain and rather large. There is a stoup by the door the head of which seems to have been the head of a thirteenth-century window. There are stone seats on either side, there is also a stone seat against the outside of the south wall of the nave, as well as another at a higher level against the south wall of the chancel. The bell-cot is a stone gable with a pent-house behind it; it is constructed for two bells, and is erected on the west gable of the nave.

The roof of the nave was probably reconstructed early in the sixteenth century; it is coved to an irregular curve with moulded ribs, and there have been bosses at the intersections. The cornice, which is very deep, is moulded with a number of roll mouldings, but projects very slightly. The section of the mouldings suggests that the introduction of carved enrichments was contemplated between the rolls. The chancel roof is flat and ugly; it is not improbable that it is fixed under the rafters of an earlier roof.

The entrance to the rood loft is from the nave, on the north side, by stone stairs built in the wall. The little window which lights the stairs is perhaps formed out of the jambs of a thirteenth-century window.

The rood screen and loft form the grandest feature in the church. It was erected probably quite early in the sixteenth century, and is certainly one of the finest specimens of the kind in the country. There were many fine oak screens in Breconshire and the adjoining counties, most of which have been mutilated or have fallen into decay, so that what remains of them is, as a rule, very fragmentary. Few of these screens were as beautiful as the one at Partrishaw, with its elaborate courses of carved foliage and ornament in its moulded beams, of which there are two on the head of the screen itself, four on the lower beam of the rood loft, and two on the beam above the seventeen panels of open tracery, which are fixed between moulded mullions and form the front of the rood loft. The beam over these panels has large holes cut in its top at almost regular intervals, which indicate that there probably was another enrichment over it. Except the screen at Llangoom, near Usk, I have not seen anything to compare with the one at Partrishaw. There was no doubt a cove with moulded ribs and carving between the head of the screen itself and the enriched beam under the rood loft, as at Llangoom, but more flat.

There are two original stone altars against the western face of the rood screen near the north and south walls; some of the crosses may still be distinguished on them.

The curious font is large and circular with a narrowed circular base of rough masonry plastered over, which stands on a broad circular base also of rough masonry, covered with thin slabs. The upper part of the font measures 34 inches in its external diameter, the basin being 20 inches in diameter, with an excavated drain. The outside of the body of the font is quite plain, but upon the flat ridge of the top of the font is the inscription "Menhir me fecit i(n) te(m)pore genillin," consisting of rudely-formed letters of irregular size, being for the most part Anglo-Saxon minuscules. On either side are two holes for the staples for the cover, and also two semi-foliated ornaments, extending into a line which runs all round within the outer edge and encloses the inscription. The font is coeval with the dedication of the church in the year 1063, and this is of considerable importance, as we have in this inscription round its top a very different style of letters either from the debased Roman capitals of Paulinus and the other earlier stones, or the Hiberno-Saxon characters of the Llantwit and other similar monuments. The system of contracting the words wherever possible had also commenced.

On the west wall of the nave is painted the full-size figure of a skeleton in red, holding a dagger in the right hand, an hour-glass in the left, and scales suspended from the left arm.

The western chapel or recluseorium is not, I think, coeval with the church, but built at a later date, *i.e.* in the thirteenth century, with subsequent alterations. It is built against the

\* From a paper, "The Church of Partricio or Merthyr Ishew (or Ishew the Martyr)," read before the members of the Woolhope Naturalists' Field Club.



west end of the church without being bonded into it, its south wall being in line with the south wall of the nave. There is a stone altar at the east end of the chapel, the south end of which abuts against its south wall. Upon examination it will be found that the altar slab most probably occupied another position before it was erected here. The base of the altar is of rough stone walling, plastered over. There is no indication of its having been added to at any time, but the top of the altar is formed by an altar slab which is not nearly as large as the present altar, the extra space being made out by a second stone at the south end and a little plaster to make it good up to the south wall. The original altar slab has the usual five crosses upon it; it has also a sixth cross towards its north end, which has all the appearance of being original, but I have never met with a case like this before. When this altar was arranged as it now stands, the square opening over it was probably cut to bring the high altar of the church in view from the chapel. The head of this opening is rounded off into the jambs like the head of the window which lights the rood loft. In the east wall of the chapel, north of the altar, is a cinquefoil niche for a figure, and there are two steps in front of it, the lower step, which is in line with the altar, being about 14 inches high; this is a pretty clear indication that there was a footpace all across the chapel in front both of the altar and the niche. The entrance to the chapel is by a plain-pointed door in the south wall; there is a small window in the west end now walled up for a modern fireplace and chimney. I wish to call particular attention to it, for it has been described as a fifteenth-century window. I am clearly of opinion, however, that it is of thirteenth-century date. In the south wall, east of the doorway, there is a very good fourteenth-century single-light window well cusped, and there is a modern window west of the doorway. There is a good plain roof to this building, which is frequently called a recluseorium; but it is, I think, a chapel, and I see nothing to justify its being called anything else. The position is certainly unusual, but it would have been difficult to add a chapel of such a size to the old church in any other position, for the ground on the north side of the nave has been excavated out of the side of the mountain, and deposited on the south side. A chapel could therefore not have been added towards the north or south without great trouble and expense; indeed, on the south side I think it would be hardly possible to make a secure foundation on the "made ground."

I believe we have at Partrishaw some remains of a Norman nave. Alterations were made, I think, in the thirteenth century, and it was then, I believe, that the chancel, the western chapel, and south porch were added, the single-light window to the east of the doorway of the western chapel being inserted in the fourteenth century; then, when the rood loft and screen were erected, which was probably soon after the year 1500, the east and south windows of chancel, the priest's door, the three-light window of nave, the doorway leading from porch to nave, and the stairs for the rood loft were introduced. It was then also, in my opinion, that the present arrangement of the altar in the western chapel was effected, the opening cut over it, and the niche for the figure introduced.

The repair of the church which is so full of interest for archaeologists is, I believe, contemplated, and I understand that it is to receive such careful conservative treatment that we may rest content it will stand for many a long day to interest future generations, and show them what care has been bestowed upon it, not only by those who built and enriched it in Mediæval times, but by those, too, who in this nineteenth century have, and will have, the responsibility of maintaining it with all its interesting features and details, telling its own history to them as it now does to us.

## TESSERÆ.

### Venetian Painting.

SIR C. L. EASTLAKE, P.R.A.

IT is strange that I never dwelt on the system of the Venetian school till I had myself discovered the way in which nature herself atones, if I may so say, for this want of light and shade in hot countries. In short, the character of nature here, and in the works of Titian and others, is to produce light and dark by colour, the noblest and most general system of imitation. In Greece the sea and sky are sometimes the darkest parts of the general picture. The monotony of a sandy ground is relieved on one side by the sparkle of marble, and on the other by the depth of the cypress and evergreen oak. So much for inanimate nature; but we find the deep rich tones of men and animals, and even the dresses of the first, all combine to make amends for the want of that shadow which the northern climates have without colour. The Venetians, therefore, formed their style from the study of Italian nature. In all the pictures I have sent to England I have put in practice the system I endeavoured to describe. There is very little light and shade

(except in the landscape), and a great deal of deep colour. In a hand, for instance, by the time the half-lights and shadows are done (both differing from the colour of the light), the mass of flesh colour is lost. In the Venetian pictures and in nature looked at largely, the local colour ends only with the outline; and, to give the utmost quantity, the Venetians make the outline also warm. This, I consider, forms a considerable part (applied to everything) of the breadth of colour so admired in Titian.

### Heraldry and Architecture.

J. B. WARING.

Amongst other useful accessories to architectural ornament, the employment of heraldic and other insignia has fallen into nearly complete disuse at the present day, except in the case of buildings in the Gothic style; and we consider it a great loss, for both in point of utility and ornament they are very valuable. A shield of armorial bearings very often decides at once the date of a building and the person by whom it was erected. Thus the *Biscia* of the Visconti, the *Palle* of the Medici, the winged bull of St. Mark, the Florentine lily (*Giglio della Comunità*), the Tudor rose and portcullis, the *Nodo* of Alonzo el Gabio, the sheaf of arrows of Isabella la Cattolica, all speak as it were to the spectator, and tell him the origin of the building on which they are found; nor are they less useful in the case of particular individuals, whose family history they often serve to perpetuate. In Italy and Spain examples of their application as ornament abound. Originally they were placed in a central position; in some cases they were used as a frieze, or between the spandrels of arches, and in the Florentine palaces of the fifteenth and sixteenth centuries were applied with good effect as an angle ornament. They were capable of very varied treatment. Designs of a florid character are to be found in the *petits maîtres* of the German school particularly, to which the student is referred, assured as we are that, not in this particular case only, but in several other subordinate ornamental features applicable to architecture, he will find therein many valuable ideas. We would suggest that any mottoes or inscriptions connected with them should be made with inlay, instead of being engraved, for the sake of its superior durability.

### Greek and Gothic Architecture.

HARTLEY COLERIDGE.

The Grecian temples and statues are only antique from the accident of being ruined or mutilated. Had we (and who will say that we never shall have?) artists capable of reproducing them, they would belong as much to the present age as to that of Pericles. The principles of grace upon which they are founded are no more Grecian than British. The Greeks, it is true, had the merit of discovering them, but anyone may adopt them who can; they are never out of place, never out of date. But a Gothic cathedral is antique, though entire; dilapidation is not needful to give it age. Should a modern architect succeed in rivalling the hallowed structures of our forefathers (an event by no means probable), still his workmanship would savour of the times of yore, of other men than we, other manners than ours. We should feel the new stone and stucco-work, the freshness of youth upon the new wonder, somewhat painfully, and in a fanciful mood might marvel in what cavern of the earth it had been hidden so many centuries—by what mechanism it had been raised. It is seldom safe to imitate antiquities; an antiquity that is not ancient is a contradiction. It reminds us of something that it is not. The charm is gone. It is like the tragedy of "Hamlet" with the character of Hamlet omitted. In great works it is well to keep close to the eternal—to that which is never modern, and never can be antique. But it is impossible to exclude the spirit of our own age, and, therefore, to mimic that of another can only produce incongruity.

### Russian Mosaics.

PROFESSOR ARCHER.

The first operation in preparing to copy a large picture in mosaic is to draw it on paper, or canvas in outline; then it is divided by lines into squares the size of the tesserae, and these are coloured in with water-colours. A very strong wooden frame is then prepared; those I saw in use were of balks five inches in thickness, and about six or eight inches in depth, well clamped with iron at the angles. This frame is laid on a smooth stone table and is filled with mixed plaster of Paris, which is then left to harden and dry, after which it is turned over, and the surface which was next the smooth table is found to be nearly perfect, and is rendered quite so by scraping and other operations. Upon this an outline of the picture is then drawn, and lines ruled at right angles so as to form squares corresponding with those on the cartoon, and the artist proceeds to set the tesserae. In order to do this he begins to cut out the stucco within the outlines of the drawing one square at a time, sufficiently deep to take a quantity of mastic, made of powdered marble and oil, into which he presses the tesserae, keeping the upper surface perfectly level. In this way he



works through the whole picture, which is then turned over and laid with its face to the stone table. All the stucco is then carefully removed from the back until the rough under surfaces of tesserae are exposed. Roman or Portland cement is then run in so as to form a solid back to the picture, which after being cleaned is ready for removal to its destination. The smalts or glass enamels are manufactured at the Imperial Porcelain and Glass Works, and are supplied to the mosaic factory from time to time as wanted. They are in round flat cakes four or five inches in diameter, and three-quarters of an inch in thickness. A small apparatus formed of six cutting wheels worked by a lathe, the wheels of malleable iron, covered with tin and coated with emery, set at equal distances on an axle, slits the cakes into strips of equal width, and these are then cut transversely or diagonally, as the artist requires, with great ease by means of a file and chisel. Smaller ones are made in the same way, but the smallest are drawn out into square rods and broken to the lengths required. The gold tesserae are made by taking heated plates of glass, three inches square, and covering their upper surfaces with gold leaf; then upon this is placed molten glass, which is pressed on with a copper plate till it forms only a thin even layer. They are next carefully annealed, and are then fit for use. The Byzantine character of the Russian mosaics involves a great cost, from the larger quantity of gold tesserae employed.

### Thirteenth Century Village Churches.

G. E. STREET, R.A.

You must not imagine that it is only in great abbeys and cathedrals that the thirteenth century was so fertile. On the contrary, little village churches in all parts of the land illustrate the same possession of power on the part of the country architect or mason that we see in those who built the former. I know no examples more interesting than these, whether you take the Sussex village church, with its intensely simple lancet windows, its coved wooden roof, and its shingle spire, or whether the Northamptonshire churches, built of good stone, with much rich decoration in their detail, and adorned with towers and spires which are the pride of the whole country; in all you will find the same extraordinary equality in detail and harmony in character. They bring before us the especial glory of England—the small village church in perfection; and there is one feature in them which one may almost say is unsurpassed elsewhere. This is the steeple. Usually it is placed at the west end of the church, and surmounted by a spire. The outline of this is always of the most severe kind—an octagon placed on the square tower, with very simple spire-lights on the cardinal sides only, and a steep slope, and sometimes small pinnacles connecting the octagonal base of the spire with the square outline of the tower. Here, as in most works of the period, the effort seems to have been to obtain as simple and graceful an outline as possible, and to construct the work so that there should be as few elements of decay in it as might be. In later times, though the early broach spire was sometimes copied, it was much more usual to add parapets, flying buttresses, and complicated pinnacles at the base of the spire, and thus at the same time to destroy the simplicity and diminish the stability of the work.

### French and English Portals.

SIR G. G. SCOTT, R.A.

The great glory however of the French churches is their doorways, and beautiful as are those of our own, they make no kind of pretension to vie with those of our neighbours in magnificence. In this respect the architects of the two nations seem to have gone on quite contrary principles, for the French even in buildings on the secondary scale introduced portals of prodigious size and extreme richness, while the English even in buildings on a grand scale often made their doorways very inconspicuous. Compare, for instance, the façades of Amiens and of Wells—in one the portals are everything, so that you can recollect little else, and in the other they are nothing, and you can scarcely recollect their existence, while in the façade above the English example is the richer of the two, and the illustrative sculpture which in one case is expended on the portals is in the other diffused over the entire front. In England a magnificent portal is of rare occurrence, in France one looks for it as a thing of course. Nothing more glorious than the great French portals can be conceived; the lofty and deeply-receding jambs are divided in their ample height into two portions, the pedestal or basement of which is richly decorated either with diaper-work or with sculptured medallions, or, as at Amiens, with both, and the upper stage contains colossal figures of apostles or other holy men of old, who appear to view with severe and solemn benignity the entering crowd, and to express by the gravity of their countenances the caution, "Keep thy foot when thou goest to the House of God." In the tympanum are sculptured scenes from Scripture history, the lives of saints, our Lord surrounded by the evangelistic symbols, or perhaps the awful scenes of the final judgment, and

the mouldings of the arch are probably filled with angelic figures as if the guardians of the faithful worshippers, while this impressive array of imagery is placed in a setting of the noblest and most perfect architecture, and that on a scale well suited to the sublimity of the sentiments expressed.

### The Stuttgardt Building School.

J. SCOTT RUSSELL.

Some of the most distinguished directors of the technical university represented to the Government the expediency of forming a new school, intended for building crafts and tradesmen of the rank immediately under the professional men and skilled masters of the technical university. That was accordingly established, and succeeded so quickly and so completely that it became necessary to erect quite as large and as handsome a building, and to devote quite as large a staff to that purpose as to the original polytechnic university. It is now one of the most remarkable and meritorious schools on the continent. The men whom it was especially designed to help in their trades were stonemasons, bricklayers, and carpenters, to be trained for future master builders; lower class builders to be trained for master builders, constructors of public works, subterranean works, and constructors of reservoirs; constructors of waterworks, river-works, and mill-works, and land surveyors of the first and second class. The general workmen whose education it undertakes are plasterers, tilers, roofers, joiners and carpenters, glaziers, turners, decorators, ornament-sculptors, modellers, engravers, smiths, gold and silver workers, gardeners, and husbandmen. Its great merit is its perfect adaptation to the wants of each separate class of persons. For young men who are much employed in winter, and less in summer, it provides summer courses of study, and gives them vacation in winter and *vice versa*. It has classes in the early morning, the same at mid-day, and the same over again in the evening, and the hours of the different classes are so timed that the pupil may attend many or few hours of the day and still obtain the studies he requires. This school is presided over by the most distinguished architect of Württemberg, with no fewer than 28 professors and masters under him. Systematic courses are provided for those who can go through the education required to obtain certificates of competence, and their estimation of its value is proved by the fact that the school is crowded by exactly that class of men whom it was intended to benefit.

### Capitals of the Ducal Palace, Venice.

C. C. PERKINS.

Now we come to the carved capitals of the thirty-six columns upon which the edifice rests. They, too, have for the most part their separate as well as their connected meaning, though the sculptor apparently allowed himself a certain freedom of invention. They represent the conditions of man, the animals and plants needful for his existence and comfort, the planets which preside over his destiny from the cradle to the grave, and the winds which purify the air and propel his ships across the sea. The capitals beginning at the Raphael end of the façade are sculptured with figures of children, heads of young knights and warriors, birds, emperors (amongst whom are Titus and Trajan), women's heads, virtues and vices, symbolically represented; wise men, such as Solomon, Aristotle, and Pythagoras; the planets Saturn, Jupiter, Mars, and Venus; the patron saints of sculptors, each working upon a capital, a cornice, or a figure; the trades, such as those of the lapidary, the carpenter, the husbandman, the blacksmith; the seasons, with their varying occupations; the ages of man represented by the infant, the schoolboy, the warrior, the student, and the old man leaning upon his crutch, and dead upon his bed; the courtship and marriage of a young man and woman, who are again represented with their child, first an infant, then a youth, beside whose death-bed they are weeping and praying. Last of all, we come to the column of Justice, which stands below the Judgment of Solomon and the statue of Gabriel. Its capital, which is the finest of the series, is covered with the richest leaf work, growing upward from its base and drooping in graceful volutes, between which are inserted figures of Justice seated upon two lions, the lawgivers Aristotle, Solon, Numa, and Moses, and an admirable group of the Emperor Trajan reining in his horse to listen to the widow's prayer for vengeance upon the murderer of her son.

### Sewer Construction.

SIR R. RAWLINSON, C.E.

A main point to be kept in mind by the engineer is that sewers and drains should not be continuous flues up which sewage gases can flow, accumulate, and concentrate, but all sewers and drains should have points of interception and of ventilation calculated to subdivide and liberate the fresh gases at numerous safe points, externally. That is, no sewer nor drain must, under any conditions, form one continuous tube or flue; neither should sewers nor drains traverse the basements of buildings, public or private, but be outside the main walls.



## NOTES AND COMMENTS.

MANY books have gained a name through printers' blunders, and if a volume is secure of renown in proportion to the number of its errors, the Salon catalogue need have little fear of rivals. The French are so orderly in works of the kind, we can only suppose that the Society of French Artists has been made the subject of a practical joke. In a great many cases numbers appear to be omitted; in others the figures have been transposed in a mysterious way, and, in consequence, do not correspond with those on the frames. But errors of the kind might be overlooked, for the visitor can identify the pictures if he has time to spare for mastering the puzzle. But what is to be said of the colossal blunder which gives the catalogue pre-eminence, and which we have now to describe? On page 228, after No. 2,579, we find 2,480, and the numbers follow in succession. On page 218—for ten is an important number in France—we find the same 2,480, and a corresponding regularity in succession. You hear that Mr. BASIL BRADLEY has one of his pictures in the Salon under the number 2,484, and you naturally look for a work by the first of living English animal-painters. But, owing to the freak of the French compositors, the visitor who trusts to his catalogue probably finds himself in front of a picture of *Judith and Holofernes* with the same number. Frenchmen make capital fun out of the odd titles which the pictures have acquired, and the English reader may gain a faint notion of the daily experience of the visitors to the Salon by using last year's catalogue for the present exhibition at the Royal Academy. To give piquancy to the joke, the publishers announce that they "poursuivront rigoureusement" every one who copies their catalogue.

OWING to the topsy-turvy style of printing, it is impossible to say how many works are really exhibited in the Salon this year. The highest number in the catalogue is 5,034, which comprises painting, sculpture, architecture, drawings, engravings and lithographs, medals, &c. The last picture among the paintings is numbered 2,488, and if the catalogue were correct it would show that this year's Salon corresponds with last year in the quantity of pictures. There are more lady artists represented than heretofore. In the section of painting they have 198 works, in sculpture 98 works, and one work among the medallions. Thirty-seven of the engravings are by female hands. The proportion among the water-colour drawings and designs is the highest of all, for there are 215 works by ladies, or more than one-fourth.

THE London Corporation have decided to adopt a report of the chairman of the City Lands Committee recommending that the old Bankruptcy Court, with the ground, shall be purchased at a cost of 93,500*l.*, the value determined upon between the City architect and Sir HENRY HUNT on behalf of the Government. The scheme for forming an open space in front of Guildhall, so as to show the whole façade and improve the general appearance of this locality, thus seems likely to assume larger proportions than was originally anticipated. The clearing away of the old law courts and the removal of the police-court opposite would alone be a desirable improvement.

ON Tuesday a fine bust of THOMAS GRAY was unveiled in the hall of Pembroke College, Cambridge, and now marks the spot whereabouts the poet so often sat, and where he was seized with his last illness. The features of the bust have been taken by Mr. HAMO THORNYCROFT from a picture and silhouettes and a small drawing belonging to the College. Sir FREDERICK LEIGHTON, who was present, humorously suggested that a certain Nemesis seemed to have decreed that a response should come not through the lips of one whose craft it is to gild his thoughts in words, but from one who seeks to be articulate in forms and colours, as public penance for certain cold discourtesy said to have been evinced towards GRAY by the painter HOGARTH. It is interesting to note the individuality of GRAY from the artist's point of view, as described by Sir FREDERICK LEIGHTON as follows:—"One finds something to forget, but how much to love and to admire. He was a

prophet and a precursor in all that we love and admire. It was chiefly in relation to landscape that the artist's feeling stirred in him. Nature knew him for her lover, and unsealed to him her inmost secrets. Her beauty revealed to him new and richer meanings. A fuller charm breathed for him out of the meadow and from the mountains lost in antique gloom, and let in a new day. That gloom was turned before his eyes to glory. The new dawn was at hand, and the path was clearing for TURNER, for CONSTABLE, for CROME. Thus it is due from the artist to join in doing homage to a man who was foremost among those to herald the day that gave such men to our country."

M. CARRIER BELLEUSE modelled the statue of ALEXANDRE DUMAS which was unveiled on Sunday at Villars Cotterets, the native village of the great romance writer. It has been a labour of love for the sculptor, in the same way as DORÉ's figure in the Place Malesherbes, which was produced without any thought of commission. DUMAS is represented standing in a sort of loose coat, with his shirt also open and his neck bare, as was his custom when at work. The left hand rests on a pedestal, inscribed with the names of the author's works. The endeavour of the artist was to suggest not only the man of genius, but the generous companion who fascinated everybody who met him, and who was as prodigal in his charity as in his invention of plots and incidents.

A SOCIETY is proposed to be formed in Glasgow under the title of the Regality Club, with a view of preserving a record of the relics of old Glasgow, or, at any rate, of such as still remain before they have all disappeared in the ravages of the City Improvement Trust. The membership of the Regality Club will be limited to two hundred, each of whom will pay an annual subscription of one guinea. In this way it is hoped a fund will be formed sufficient to enable the club to issue to the members photographs or other reproductions of whatever is thought worthy of having its memory preserved. To these reproductions a descriptive notice will be attached.

THE first mass will be said in the Catholic church of St. Piran, Chapel Hill, Truro, at 9 A.M. on the Feast of Corpus Christi, June 4, and during the day there will be exposition of the Blessed Sacrament from the morning to the evening service. Mr. SILVANUS TREVAIL, of Truro, is the architect. Remains of the original oratory of St. Piran still exist at Perranzabuloe, having been discovered early in this century, after being lost for over one thousand years under the shifting sands. St. PIRAN came over from Ireland, and, after his death, his remains were buried beneath the altar of his oratory.

THE collection of Orcadian antiquities formed by Mr. J. W. CURSITER, F.S.A.Scot., has received an addition in a curious relic discovered two or three feet below the peat moss on a farm in the neighbourhood of Kirkwall. This is a box cut out of a solid piece of beech, which measures 11½ inches in length by 5½ broad and 3 deep. The lid, sides, and one of the ends have been richly carved, each with a different pattern of scroll-work. The lid, the whole of which has not been secured, seems to have been a sliding one, being pushed in from the carved end of the box under a metal band, through grooves in the upper inside edge of the sides. When come upon, the box was standing on end upon the subsoil under the peat, and contained what has evidently been the tools of a wood-carver or similar tradesman, packed in a material too far decayed to be preserved, resembling fine straw, the handles of which alone remain to tell the tale. There are about fourteen of them, made of horn, bone, deers' horn, and wood, some of them evidently carrying a blade at each end. The box also contained two awls, one made from a tine of deers' horn, and the other of bone with a large rounded head, and a piece of pumice stone rubbed smooth on all sides. In the sides of the box are small holes, through which thongs of leather have been inserted and fixed inside by being tied, the other ends evidently intended for tying across the top of the lid. There were two or three small pieces of thin leather also found in the box.





Spott





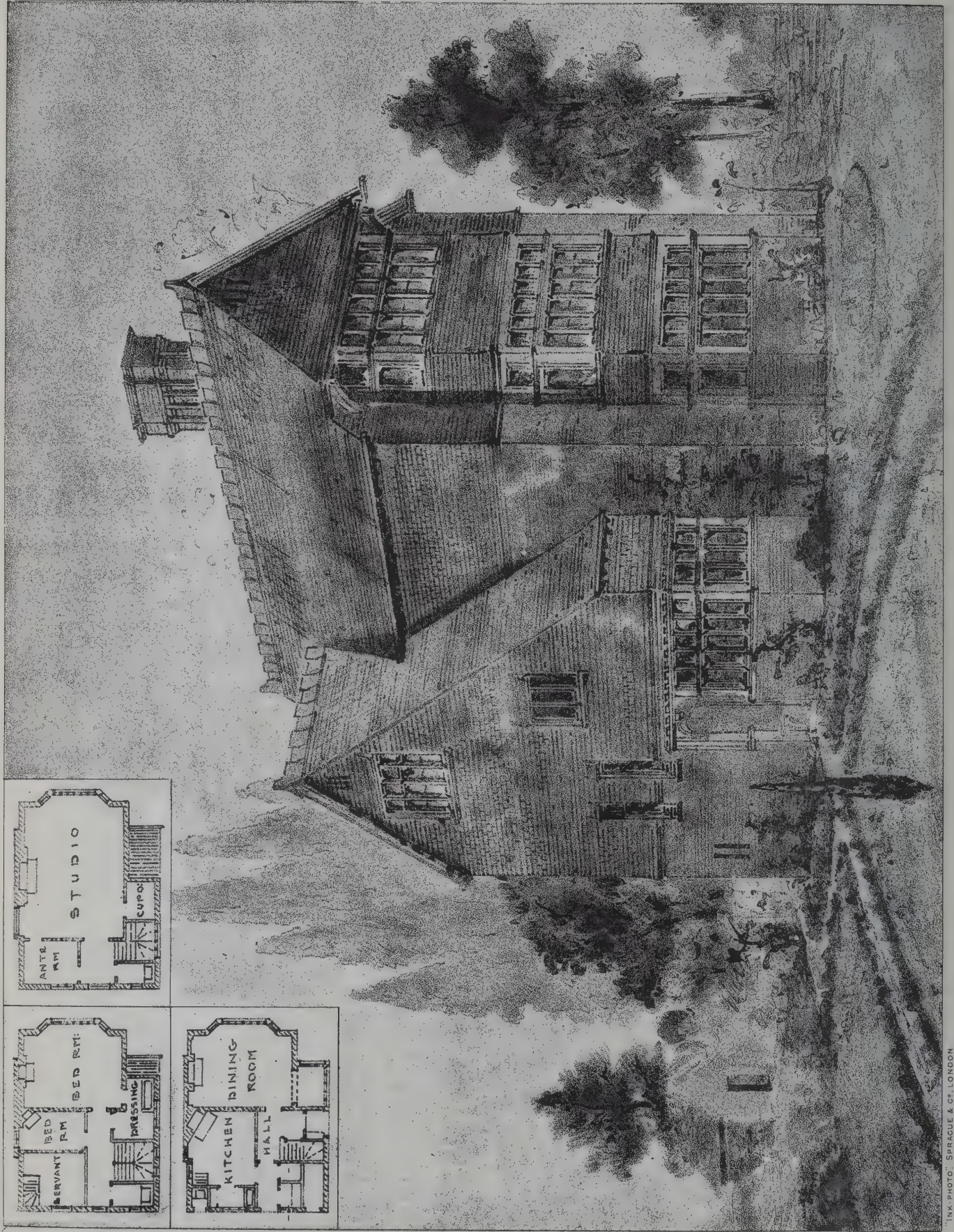
*The Canterbury Pilgrims.*  
By Thomas Holburn, R. A.







The Architect, May 30<sup>th</sup> 1885.



AN ARTIST'S COTTAGE.  
THOMAS WARD, ARCHITECT.

INK PHOTO. SPRAGUE & CO. LONDON



St Peter's Hospital:  
Covent Garden  
Entrance Gable  
J.M. Brydon Arch<sup>t</sup>









## ILLUSTRATIONS.

ENTRANCE GABLE, ST. PETER'S HOSPITAL.

WE give this week a view of the central gable of this building, which was built about three years ago. The materials are red brick, with Portland stone for the doorway and the mullions of the bay window. All the rest of the moulded work in the cornices, pilasters, and carved panels is in cut and rubbed brick. The builders were Messrs. PATRICK & SON, and the architect Mr. J. M. BRYDON, of 5 Cambridge Place, Regent's Park, from whose drawing in the Royal Academy our lithograph is taken.

AN ARTIST'S COTTAGE.

THIS illustration is taken from a water-colour drawing by Mr. THOMAS WARD, architect, which was exhibited last year at the Royal Academy.

THE CANTERBURY PILGRIMS, BY T. STOTHARD.

THE plate from STOTHARD'S picture, which we published a few years since, was in a very short time "out of print." Since then we have had continued applications for a reprint, and they became more urgent on the appearance of the companion work, *The Flitch of Bacon*. We have been, in consequence, compelled to reproduce the *Canterbury Pilgrims*, and we cannot give a better description of the work than an article which was written to accompany the plate when it first appeared in *The Architect* :—

In the early part of the present century there was a man named CROMEK, who, in his own opinion, had a great influence on the art and literature of the time, and who used to boast of the painters and poets he discovered and helped to make famous. He was by trade an engraver, having been one of BARTOLOZZI'S apprentices, and some fairly good plates by him may be found in books. There was nothing remarkable about his work, and being a shrewd fellow he saw that he must take some other road to affluence. Accordingly he set up as a kind of medium between men of ability and the public, and was partly agent, partly publisher, and, if need be, a compiler of other people's writings. It was inevitable that such a man must soon know that in WILLIAM BLAKE there was an instrument likely to be of use to him in his projects. That fine poet, painter, designer, engraver, and mystic, after many vicissitudes, was then living in lodgings in South Molton Street. The mighty spirits who so commonly came to him in his visions did nothing for his worldly prosperity, and at that time he was so poor that, according to CROMEK, Mr. and Mrs. BLAKE were compelled to live on half a guinea a week. CROMEK had not much difficulty then in dealing with such a man. By holding out promises of profitable work in engraving, BLAKE undertook to prepare those noble designs for BLAIR'S "Grave," which are the most popular of his works, at the absurd rate of a guinea and a half apiece. In speaking of things he had in view, BLAKE once let CROMEK see a pencil sketch of a Procession of the Canterbury Pilgrims, and he gave a commission for a finished drawing, or at least beguiled BLAKE into thinking so. CROMEK, however, went to STOTHARD, with whom he had much business, and, with his usual volubility, suggested to him, as if from himself, how excellently the same subject could be treated. He pretended how often he had desired to see such a picture as the pilgrims travelling on their way. The subject was attractive to STOTHARD, who had a high opinion of his own powers to paint horses in action; besides, it was one well within his province as an illustrator of English literature. A bargain was easily made. STOTHARD was to have sixty guineas for a picture which might be engraved, besides indefinite profits contingent on the success of the speculation.

STOTHARD did his best to have his picture accurate. His sons knew something of archæology, and by them he had sketches taken of costume from old manuscripts, monuments, &c. The head of CHAUCER was taken from the portrait which is supposed to have been painted by OCCLEVE. The moment selected for the picture was at the time when the procession had passed beyond the boundaries of London, and it now sounds strange to hear it said that

the wooded background was actually sketched by STOTHARD from the Old Kent Road. Seldom has a painter derived so much sincere pleasure from his own work as STOTHARD did from his *Canterbury Pilgrims*. He used to tell people that he liked to stand near the Wife of Bath listening to her witty talk. "You will find me," he once said, "resting on the bridle of her steed." When the picture was complete, CROMEK exhibited it all over the country. It was received by the public with the applause to which so attractive a work was entitled, and what perhaps is more remarkable, other painters were loud in their praise of the picture. HOPPNER said there was only one drawback—it had not antiquity in its favour; while "in respect of the execution of the various parts of this pleasing design, it is not too much praise to say that it is wholly free from the vice which the painters term *manner*, and it has this peculiarity besides, which I do not remember to have seen in any picture, ancient or modern, that it bears no mark of the period in which it was painted, but might very well pass for the work of some able artist of the time of CHAUCER. This effect is not, I believe, the result of any association of ideas connected with the costume, but appears in a primitive simplicity and the total absence of all affectation either of colouring or pencilling." The characteristic merits of the picture were, however, more truly described by the late CHARLES R. LESLIE, and as coming from such a master of the humorous in painting, his words need no confirmation. Speaking of this picture, he says :—"His humour is as true and delicate as that of ADDISON. His illustrations of the 'Spectator' are therefore perfect; but the picture in which he has displayed the most of discrimination of character is his *Canterbury Pilgrims*. The personages of CHAUCER all seem to pass before our eyes as if they were shown to us by a painter contemporary with the fact." Besides utilising the picture for the engraving, and obtaining the profits of the exhibitions, CROMEK obtained for it the sum of 300*l*.

LOUIS SCHIAVONETTI was first selected as the engraver of the plate, on his death it was handed over to his brother, and finally it was finished by JAMES HEATH.

Meantime, what was WILLIAM BLAKE doing? When he saw STOTHARD at work he was too simple to believe that the picture was in any way related to his own design. But at last, on discovering CROMEK'S treachery, he resolved to paint the *Canterbury Pilgrims* in fresco, and to engrave a large plate after it. The engraving was to be 3 feet 1 inch by 12 inches high, and was to be finished in a year, for, said BLAKE, "No work of art can take longer than a year; it may be worked backwards and forwards without end, and last a man's whole life; but he will, at length, only be forced to bring it back to what it was, and it will be worse than it was at the end of the year." Even in those days there were people who admired BLAKE'S design. It was preferred to STOTHARD'S by CHARLES LAMB. He said it was "a work of wonderful power and spirit, hard and dry, yet with grace." But the pecuniary results were not gratifying. The fresco was exhibited by BLAKE in a room over his brother's shop, but nobody came to see it. BLAKE accused STOTHARD of abetting CROMEK in filching his idea of the picture, and the long friendship of the two artists was broken in consequence, but, at the time, men who were impartial considered there were no real grounds for the charge, and since then nothing has been discovered which in any way implicates STOTHARD. The two designs are the most interesting pictorial interpretations of CHAUCER which we possess, one of them, as Sir HENRY COLE used to say in the days when he was the genial "Felix Summerley," suggestive of RAPHAEL by its grace, the other of MICHEL ANGELO in its severity. Each is characteristic of the artist, and if one will continue to be the more popular, the other may be said to show the deepest insight into the characters created by CHAUCER.

The Prefect of the Seine, in asking for a further grant in favour of the municipal libraries which have of late been opened in Paris, states that a considerable addition has been made to them since his last report, for, whereas there were only twenty-four of them at the close of 1883, there are now forty-two, and this total will be raised to forty-six by the end of the year. His object is to have a library in each of the eighty "quarters" into which Paris is for municipal purposes divided; but this will not be effected for three or four years at the least.



## RESTORATION IN CORNWALL.

A REPORT has been prepared by Mr. J. D. Sedding on the condition of the well-known old church at Madron, near Penzance, and in the neighbourhood of which is the old ruined oratory, known as St. Madron's. Speaking of Madron Church, Mr. Sedding says the building ranks as the mother-church of Penzance, and its architecture represents, by some detail or other, almost every period of English art. Its walls date from Norman times. The antiquity of the church was previously well known by the fact of its having a Norman font, but its age is established by still further proofs. The present fourteenth century south arcade stands upon the foundations of a church of much earlier date; the eastern respond has the original circular Norman pier; and the eastern and western responds have the original Norman walls, 3 feet 3 inches thick. The range of its architectural types gives the church singular importance, for there is an Early English sedile and credence in the chancel, a two-light thirteenth-century window, the tower and south arcade date about 1350, the north arcade is of two periods of the 15th century (the eastern half—of Bere stone—is of Devonshire type of mouldings and carvings, and was probably brought to Penzance by boat, while the western half is of local type), and the windows, roofs, and screens are of several periods of later Mediaeval work. Further, there are some exceptionally fine monumental slabs of early seventeenth century date, with hatchments, monuments, pulpit, and other fittings of still later date. The church is thoroughly representative, each and all of the relics of the past enumerated are either typical of English art of various periods or bear upon local history. The restoration, if undertaken, should be carried out without any unnecessary disturbance of time-honoured features, and without tampering with any detail in the church which has local or artistic value.

In reference to the condition of the fabric, the walls generally are in a good state. The three eastern bays of the south arcade need to be rebuilt and renovated, as the wall has gone at that part, the arches are pushed out eastward, and one of the piers and arches is considerably splintered by unequal pressure. Most of the windows require to have new tracery, as they have been sadly marred by various "restorations" by local workmen. The two eastern windows of the north and south aisles are modern, but were redone some few years ago in exceptionally good manner, and now only require new sills and other repairs. The stained glass now in the mason's Bath stone windows can be quite well adapted to suit properly-designed tracery constructed upon the old lines. In repairing the south chancel Mr. Sedding proposes to extend the chancel another 6 feet. As this extension would still leave a clear space of 9 feet to the boundary wall, and as any grave eastwards of this extended wall would not be interfered with, but included in the church, he would strongly recommend that this improvement should be carried out. He proposes to restore the south porch upon the old lines and in granite, and to refix the sun-dial. The north porch is built without foundations, and has slipped bodily away from the church, showing a fracture in the roofs and slating at the junction with the aisle wall. The slating throughout is very old and bad, and must be new. The south wall of the south aisle is out of the perpendicular and requires repair. At the same time that these repairs are done the old rood-loft staircase, which has been destroyed, should be restored, and the old door, which is in existence, reopened on the inside of the church. The modern plastering of the walls needs to be re-done. The upper windows of the belfry are defective, and need new tracery. Three pinnacles of the tower will have to be taken down and reset with proper dowels. The tower parapet needs repair; it should be taken down on the east side and repaired where defective. The whole of the roofs are of fifteenth-century date, and capable of repair. Considering the exposed situation of the church, it will be advisable to point the slates with oil putty. The present seating is very unsatisfactory, as it is both inconvenient and unsightly, and the new seats would be of the fifteenth century Cornish type. The old screens would assist him in designing the new seats. He would propose to have the seat ends carved in oak similar to the best types in the locality. According to the new plans the seats would accommodate 475 persons. The carved screens found concealed under the baize and framework of the modern pews are of very fine design; these would naturally be restored in accordance with the fragments found. The screen to the south chancel aisle is of unusually rich character, and the treatment of the lower panels is unique. The old pulpit and sounding-board would be retained. The altar rails of about the same date would be re-used. The old hatchments would require to be taken down during the restoration of the roofs, but great care would be taken of them, and they would be replaced exactly in their present positions. The Norman font requires one new shaft, but it should be left in its present position, the place it has occupied for some hundreds of years. None of the ornamental slabs or monuments affixed to

the walls need be disturbed, but they must be carefully protected during the proposed works. The beautiful German sixteenth-century glass placed by the late vicar in the west window of the north aisle is worthy of better window tracery and of a more conspicuous place. Mr. Sedding proposes to put the organ in the north chancel aisle, and in front of this to place seats for women singers. The vestries would be at the extreme east end of this aisle, and entered from the old north door, and he proposes to place the heating-chamber underneath the vestries.

The cost of the whole of the works referred to in the report would amount to 3,000*l.*

## HARESCOMBE.

AT the excursion of the Gloucester Archæological Society last week, a long historical paper on Harescombe was read by the Rev. J. Melland Hall, in the course of which he described the church. Harescombe is five miles south of Gloucester, and contains only 478 acres. The church, which is situated at the southern extremity of the parish, is at the foot of the well-known range of hills called the Haresfield Beacon, Broadbarrow Green, &c., the site of ancient British and Roman encampments, a part of a chain of fortresses said to have been erected by Ostorius Scapula betwixt Severn and Avon, old British works adapted by the Romans to their own requirements. The church is dedicated to St. John the Baptist, and is of the simplest type, its chief feature of interest being the belfry-turret, which stands over the chancel arch, and is an octagonal spire of singular construction. Before the restoration of the church in 1871, the whole structure of the spire had subsided on its southern side, and was out of the perpendicular. It was therefore carefully taken down, the old stones being religiously preserved, and no new ones set up except where they were absolutely necessary. A perfectly plain cross, an exact *fac simile* of the original, crowns the whole. The four pinnacles now appear with a moulding and crosses of iron. Previously they were truncated and ended abruptly, and it is probable that they were anciently surmounted by statues of the Four Evangelists. At the time of the restoration of Harescombe Church, it is said that a dedication cross was found painted on the north wall. This was unfortunately destroyed by the workmen during the absence of the architect; but Mr. Hall thought that the remains of another of the consecration crosses could be just discerned over the south door. There were two bells in the bell-cot. That in the southern compartment might be supposed to be the original bell of the chapel of the Lord of Alan and his son Roger, if not of still earlier date. As was usually the case with the most ancient bells, it has no inscription; it is of singular shape, long and tapering like the flower of the campanula. The one in the northern compartment was somewhat smaller, and of later date. It bore an inscription in Lombardic capitals, "In Honore Beate Marie Virginis." As it had been useless for many years, a large piece out of the sound-bow being broken, it was recast by Messrs. Taylor, of Loughborough, and was used for the first time on Sexagesima Sunday, 1884. The ancient inscription is reproduced on it. The font is of the Early English period, and is of large dimensions; a massive circular bowl, supported on clustered pillars, thirteen in number. There is a moulding immediately below and above the pillars. So far it is one block of Minchinhampton stone. This was doubtless the font of the Chapel of Alan.

## THE EDINBURGH MUSEUM.

BY means of a syndicate formed of a number of noblemen and gentlemen, eighteen choice pieces were secured for the public museums of the country from the Fountaine Collection sold last year, and the *Scotsman* notices that four of these have been obtained for the Edinburgh Museum, where they are now on view. They include an example of each of the three kinds of ware named—Limoges enamel, Palissy ware, and Italian majolica. The specimens are:—A Limoges enamel dish, 17 inches diameter, by Penicaud (the third of that name), with the *Supper of the Gods*, after Raphael, 766*l.*; a Palissy ewer, 12 inches high, 309*l.*; a Palissy dish, with the *Rape of the Sabines*, 18 inches long, 84*l.*; and a water-jug of Urbino majolica, 10 inches high, with arabesques, 80*l.* The first two are figured in the illustrated catalogue of the sale.

The productions of Palissy have been of late years so cleverly imitated that it has become very difficult to tell a genuine from a spurious piece. It was a common remark at the time of the sale that, if they could be ascertained, the prices paid by Sir A. Fountaine at the beginning of last century for a number of his superb pieces would no doubt form a remarkable contrast to those realised for them at the present time. Still more curious, however, would it be



to learn what Palissy, who spent many years of his life in extreme poverty, obtained himself for good pieces of his ware—for example, for this small jug, bought for the Edinburgh collection, and which now fetches nearly three times its weight in gold. Palissy decorated his earthenware in three ways—with figure subjects, with conventional ornament, and with realistic models of plants and animals, and at one time of his life burned, in default of other fuel, his household furniture to feed his furnace at Saintes. The last, called his “rustic pieces,” are the most popular, but are not those on which his fame as an artist rests. The little water jug above referred to, and some much more expensive pieces which were in the Fontaine collection, are covered with this “rustic” decoration of natural leaves and shells—a style of ornament which is universally condemned as inartistic, at least when applied to objects of utility, or even when employed for purely decorative purposes. Notwithstanding this, judges of mediæval and later art so accomplished as Mr. Robinson and Mr. Franks (the advisers of the syndicate), paid at the sale far larger sums for this kind of Palissy ware than for equally important pieces of the more truly beautiful specimens of his handiwork. The explanation perhaps is that these are the most characteristic, or at least the most easily recognised, productions of “the artist in earth.”

The Limoges painted enamel is a beautiful specimen of this peculiar art. As already stated, the subject is Raphael's *Supper of the Gods*. The figures are painted in black and white, with a tinge of red on the flesh portions, and lines of gold on the drapery. The execution is bold and spirited, but at the same time careful, and belongs to a time—the sixteenth century—when the enamellers of what has been called the Mediæval Birmingham had risen to the rank of able artists, working by means of a difficult technical process. There is a great contrast between the style of art on this dish and that on the Champlévé enamel shrine obtained for the museum at the Castellani sale last year, and made at Limoges more than two hundred years earlier.

Mr. Calder Marshall, R.A., has recently presented to the museum two very beautiful and interesting life-sized models executed by himself. One of them, called *The Young Briton*, represents a mother investing her son with his father's torque, and reciting to him his father's warlike deeds, in the hope that he too will “Be a hero in the strife.” The other model is *The Prehistoric Artist* drawing the mammoth on a mammoth's tusk.

## Bygones.

“Antiquity after a time has the grace of novelty.”—HAZLITT.

### ADDISON IN ITALY.

(Concluded from page 313.)

TRAVELLING in Italy in those days was a slow proceeding, and six days were occupied on the road between Loretto and Rome. It is remarkable that Addison used Rome merely as a place of stoppage on his way to Naples, although he arrived in time to witness the magnificent ceremonies of Holy Week. He hurried to St. Peter's and the Pantheon, and drew the following comparison between them:—

“Upon my arrival at Rome I took a view of St. Peter's and the Rotunda, leaving the rest until my return from Naples, when I should have time and leisure enough to consider what I saw. St. Peter's seldom answers expectation at first entering it, but enlarges itself on all sides insensibly, and mends upon the eye every moment. The proportions are so very well observed, that nothing appears to an advantage, or distinguishes itself above the rest. It seems neither extremely high, nor long, nor broad, because it is all of them in a just equality. As on the contrary in our Gothic cathedrals, the narrowness of the arch makes it rise in height, or run out in length; the lowness often opens it in breadth, or the defectiveness of some other particular makes any single part appear in great perfection. Though everything in this church is admirable, the most astonishing part of it is the cupola. Upon my going to the top of it, I was surprised to find that the dome, which we see in the church, is not the same that one looks upon without doors, the last of them being a kind of case to the other, and the stairs lying betwixt them both, by which one ascends into the ball. Had there been only the outward dome it would not have shown itself to an advantage to those that are in the church; or had there only been the inward one it would scarce have been seen by those that are without; had they both been one solid dome of so great a thickness the pillars would have been too weak to have supported it. After having surveyed this dome I went to see the Rotunda, which is generally said to have been the

model of it. This church is at present so much changed from the ancient Pantheon, as Pliny has described it, that some have been inclined to think it is not the same temple; but the Cavalier Fontana has abundantly satisfied the world in this particular, and shown how the ancient figure and ornaments of the Pantheon have been changed into what they are at present. This author, who is now esteemed the best of the Roman architects, has lately written a treatise on Vespasian's amphitheatre, which is not yet printed.

“After having seen these two masterpieces of modern and ancient architecture, I have often considered with myself whether the ordinary figure of the heathen or that of the Christian temples be the most beautiful, and the most capable of magnificence, and cannot forbear thinking the cross figure more proper for such spacious buildings than the rotund. I must confess the eye is much better filled at first entering the rotund, and takes in the whole beauty and magnificence of the temple at one view. But such as are built in the form of a cross give us a greater variety of noble prospects. Nor is it easy to conceive a more glorious show in architecture than what a man meets with in St. Peter's when he stands under the dome. If he looks upward, he is astonished at the spacious hollow of the cupola, and has a vault on every side of him, that makes one of the most beautiful vistas that the eye can possibly pass through. I know that such as are professed admirers of the ancients will find abundance of chimerical beauties the architects themselves never thought of; as one of the most famous of the modern in that art tells us the hole in the roof of the Rotunda is so admirably contrived that it makes those who are in the temple look like angels, by diffusing the light equally on all sides of them.”

Addison does not say much about Naples. “I shall not be particular,” he writes, “in describing the grandeur of the city, the beauty of its pavement, the regularity of its buildings, the magnificence of its churches and convents, the multitude of its inhabitants, or the delightfulness of its situation.” Very few pictures and statues were to be seen, for the viceroys had removed all that were valuable to Spain. Addison spent some time in exploring all the places of interest to a Latin scholar, but Pompeii and Herculaneum were then concealed from the traveller's gaze. He returned to Rome by sea. “As in my journey from Rome to Naples,” he wrote, “I had Horace for my guide, so I had the pleasure of seeing my voyage from Naples to Rome described by Virgil.” On his second visit to Rome he occupied himself with sculpture, considering mainly to what extent the statues served as illustrations of literature. He was struck with the columns of rare marbles from ancient buildings which are to be found in the churches. He gives the following explanations of the variety of character that is to be seen in them:—

“As for the workmanship of the old Roman pillars, Monsieur Desgodetz, in his accurate measures of these ruins, has observed that the ancients have not kept to the nicety of proportion and the rules of art so much as the moderns in this particular. Some, to excuse this defect, lay the blame of it on the workmen of Egypt and of other nations, who sent most of the ancient pillars ready shaped to Rome. Others say that the ancients, knowing architecture was chiefly designed to please the eye, only took care to avoid such disproportions as were gross enough to be observed by the sight, without minding whether or no they approached to a mathematical exactness. Others will have it rather to be an effect of art, and of what the Italians call the *gusto grande*, than of any negligence in the architect; for they say the ancients always considered the situation of a building, whether it were high or low, in an open square or in a narrow street, and more or less deviated from their rules of art to comply with the several distances and elevations from which their works were to be regarded. It is said there is an Ionic pillar in the Santa Maria Transtevere, where the marks of the compass are still to be seen on the volute, and that Palladio learnt from hence the working of that difficult problem; but I never could find time to examine all the old columns of that church.”

The next goal of Addison was Florence, and it was reached by the long road through Siena, Leghorn, and Pisa. In spite of his predilection for Classic work the Cathedral of Siena wrung admiration from him:—

“There is nothing in this city so extraordinary as the cathedral, which a man may view with pleasure after he has seen St. Peter's, though it is quite of another make, and can only be looked upon as one of the masterpieces of Gothic architecture. When a man sees the prodigious pains and expense that our forefathers have been at in these barbarous buildings, one cannot but fancy to himself what miracles of architecture they would have left us had they only been instructed in the right way; for when the devotion of those ages was much warmer than it is at present, and the riches of the people much more at the disposal of the priests, there was so much money consumed on these Gothic cathedrals as would have finished a greater variety of noble buildings than have been raised either before or since that time.



"One would wonder to see the vast labour that has been laid out on this single cathedral. The very spouts are loaded with ornaments; the windows are formed like so many scenes of perspective, with a multitude of little pillars retiring one behind another; the great columns are finely engraven with fruits and foliage that run twisting about them from the very top to the bottom. The whole body of the church is checkered with different lays of white and black marble, the pavement curiously cut out in designs and scripture-stories, and the front covered with such a variety of figures, and overrun with so many little mazes and labyrinths of sculpture, that nothing in the world can make a prettier show to those who prefer false beauties and affected ornaments to a noble and majestic simplicity."

Sculpture rather than architecture attracted Addison in Florence. "There are some beautiful palaces in Florence," he writes, "and as Tuscan pillars and rustic work owe their original to this country, the architects always take care to give them a place in the great edifices that are raised in Tuscany. The duke's new palace is a very noble pile, built after this manner, which makes it look extremely solid and majestic. It is not unlike that of the Luxembourg at Paris, which was built by Mary of Medicis, and for that reason perhaps the workmen fell into the Tuscan humour." For modern statues he gave the preference to Florence over Rome. After visiting Bologna and Turin, Addison turned his face homewards, and, crossing Mont Cenis, arrived in Switzerland. Later in life he was supposed to set little value on foreign travel, unless as the best means of demonstrating the superiority of English institutions. But when Addison wrote his first book he was less a politician than a scholar, and he was not afraid to say, "There is certainly no place in the world where a man may travel with greater pleasure and advantage than in Italy. One finds something more particular in the face of the country, and more astonishing in the works of nature, than can be met with in any other part of Europe. It is the great school of music and painting, and contains in it all the noblest productions of statuary and architecture, both ancient and modern."

### COVENTRY CHURCH TOWER.

AT the meeting of the general committee for the restoration of St. Michael's church and steeple, Coventry, a letter was read on the state of the tower and steeple, in which the late Sir Gilbert Scott said:—

My attention having been recently directed to the state of the interior of the tower of St. Michael's church, I beg to trouble you with a few remarks and suggestions as to that beautiful portion of the building, which I have been surprised to find is even in Coventry much less known than it deserves.

The whole interior of that magnificent tower was originally open to the church, and visible from within to the height of about 100 feet from the pavement. The walls are throughout ornamented with niche-work, and the windows are as richly moulded within as without, while the whole was closed in overhead with a beautiful groined vaulting of stone, thus forming altogether a most magnificent lantern, probably nearly (or quite) the finest in England.

When this was first shut off from view I am not aware, but it would appear that about fifty or sixty years back the bells, which were formerly above the lantern, were lowered into it, the groined vaulting was destroyed to make room for them, and the entire lantern was choked up from bottom to top with a huge structure of timber-work to carry the bells, which, after all, do not appear to be much aided by this enormous sub-structure, but still rest in great measure, if not entirely, upon the walls, the finest feature in the interior of the church being thus destroyed for no practical utility. I am inclined, indeed, to think that the tower would be much more secure without this encumbrance.

As so much is now being effected to bring back the interior of the church to its ancient beauty, I would beg earnestly to press this feature on the attention of the parishioners.

It would be a magnificent addition to what is already doing if this beautiful feature were again brought into view by clearing it of its obstructions.

There are two ways of effecting this—the one is to restore the bells to their proper place, one storey higher than at present, supporting them by a very strongly framed floor, so constructed as to brace the tower immovably together at that level, and thoroughly doing away with the present timber-work, and restoring the internal features of the tower.

The one drawback to this is the dilapidated condition of the tower itself. Had there been any prospect of the immediate and thorough restoration of the tower, an object most earnestly to be wished for, I should have no hesitation in urging this most natural course; if, however, the tower is externally still to be left in its mouldering condition, if its once glorious symmetry is still to be lost in ruinous decay, and its once powerful and

nicely graduated buttresses be suffered still from year to year to fall away into impalpable dust, and to become mixed with the soil of the churchyard below, I would not venture upon such a suggestion. There can be no doubt that every vibration of the bells causes some portion of the moulded surface to be lost, and till that surface can be effectually restored the bells will be better elsewhere.

I made about seventeen years since a very careful survey, with measured drawings, of the tower, and I can speak from my own observation in saying that the disintegration of the exterior has, during that interval, made rapid progress—a process mutually aided by the action of the atmosphere from without and the vibration of the bells from within, every particle weakened by the one being soon shaken off by the other.

Unless, therefore, there could be a public movement for the restoration of the beautiful steeple throughout, I would strongly recommend that one of the causes of disintegration should be removed, and that the present timber construction should be temporarily erected at the bottom of the churchyard for the reception of the bells till the tower be restored. This will have the double effect of saving the crumbling exterior from injurious vibration, and of opening out the beautiful interior to view. The timber framing is extremely massive and strongly braced, and could, with some additions, be rendered a strong and serviceable campanile which a little contrivance would render not unsightly. I, of course, view it only as a temporary structure, feeling well assured that the feeling of the county and of the country generally will not permit one of the finest steeples we can boast to continue in decay, and that before many years we might thus be able safely to restore the bells to their original position.

A meeting will be held to decide on the sections of the work to be carried out, the tender for which we publish this week.

### ASHLEWORTH.

AN excursion was made on Wednesday in last week by the Bristol and Gloucestershire Archæological Society to Wainlode Hill and Ashleworth. In course of the proceedings, a paper was read by Mr. F. W. Waller on a group of buildings of much archæological interest at Ashleworth. These were the parish church, the courthouse, the barn, all near together and forming a picturesque group, and the old vicarage, slightly removed from the church. The date of the buildings, Mr. Waller said, was conjectural. The church, like most other parish churches, has a history commencing with the Conquest, or perhaps even in earlier times, from whence in the different parts of the building we can trace all styles of English church architecture—namely, Norman, Early English, Decorated, and Perpendicular, and ending, so far as we have any interest in following it, in the Jacobean pulpit and other fittings. The church consists of a nave, 45 feet by 17 feet; a chancel, 21 feet by 14 feet; a south aisle, 44 feet by 13 feet; and a chancel aisle, 24 feet by 13 feet, and a north porch and a tower at the west end of the nave. There is an arcade of four arches between the nave and south aisle, a chancel arch, and an arch between the chancel and the chancel aisle. Part of the steps to the rood loft yet remain; some portion of a good oak screen, a fine Perpendicular font, and two piscinas. The north wall of the nave, 2 feet 7 inches in thickness, is without doubt the oldest part of the building, and in the interior it presents one of the most interesting specimens of herring-bone masonry in this county. This may be Saxon, or it may be Norman work, for it is difficult to understand what alterations have been made in this portion of the original structure. The introduction of the Late Perpendicular doorway is simple enough; but what is the small doorway now converted into a window? Is the semi-circular arch over the interior of the doorway a Norman insertion in Saxon work, or is it altogether Norman? The door itself, with its old wood lock and ironwork, appears to be of Norman times. Buff stone was used for the dressings of this work, and the same material can be seen over the nave arcade—probably the old stone of the Norman walls re-used by the builders of later periods. Next in antiquity is the chancel of Early English work, the north and east walls of which are 3 feet thick, and there are two windows in the north wall, one a triplet, and the other a single light. The east window has been filled in with modern tracery. We then come to the lower stages of the tower and part of the chancel aisle, in which we have Early Decorated architecture of a fine order, especially the two-light west window of the tower and a small priest's doorway in the south wall of the chancel aisle, which is very simple and effective. The roofs of the church, partly Early English and partly Decorated, are of rude construction. Each rafter is framed and trussed, and with tie-beams extending from wall to wall. A part of the south aisle roof is boarded and divided into panels. The arcade between the nave and the south aisle consists of four arches, carried on piers 2 feet 2 inches in diameter. The



arches are four-centred, and the mouldings of the capitals, and indeed the whole of the stonework of this arcade, is of a very rough kind of chopped work. In the outer members of the arches the re-use of the puff stone may be noticed. The builder of the courthouse adjoining the church has left his mark on the east window of the south aisle, now filled with modern tracery. The label moulding is of the same section, and terminated in the same manner as the courthouse windows. This is especially to be noticed in the large relieving arch. The south porch and the upper part of the tower and spire are Late Perpendicular. There are remains of good oak seating and an old oak screen in the south aisle, and an old door with good ironwork at the west end of the south aisle, all of which are well worth inspection. A wooden porch was removed some years ago from the west end of the south aisle. There are six bells in the tower, cast by Rudhall. One is dated 1687, by Abraham Rudhall, which Mr. Ellacome says is probably one of his earliest bells. The base of the old churchyard cross yet remains on the south side of the church.

In the courthouse we have the remains of a fine and strongly-constructed manor house, probably of the fifteenth century. It has been altered considerably since its erection, but the original building can be easily traced. Partitions of all kinds have of late years been erected across the various rooms to convert the building for the purposes of a farmhouse, as which it is now used. There is a large hall (now divided into several rooms on the ground and first floors), the original dimensions of which were 37 feet by 19 feet and 20 feet high to the wall plates, having a fine open oak roof. It is lighted in the east and west walls by means of four large transomed windows, two in each wall. Here also are the chief entrances to the house. There are two similar but smaller doorways in the south wall leading into a part of the building which probably contained the kitchen, butteries, &c. On the other side of the hall, and extending further towards the east, are large rooms, probably parlours and private rooms, and above these are more rooms of the same size as those below, and open to the roof, approached by means of a circular stone staircase. The rooms over the kitchen are of a similar character, and one of these has been much altered since it was first erected; remains of stencilled decoration and inscriptions are to be seen on these walls. The whole of the building, including the hall, is covered with a fine oak roof, with well-framed principals about 9 feet apart, with collar beams, wind braces, &c., the effect of which is exceedingly good. The timber and stonework of this building are singularly massive; the floors are constructed with oak beams 1½ feet square, and about 8 feet from centre to centre, which carry joists 9 feet by 6 feet placed flat, and these joists are only 7 inches apart. The stonework is equally strong. Over the front doorway of the hall, which is 4 feet wide, there is first an arch of dressed stonework 1 foot 2 inches in depth, then a label moulding of 5 inches, and over all this a reclining arch turned in native stone 1 foot 3 inches in thickness. The arches over the windows are equally strong, as also the mullions of the windows, all of which are made to receive shutters. Note also the ceiling of the stone staircase with the heads in the cornice, one of a king (one of the Henrys) and the pretty quatrefoil windows in the east and south walls of the building. A lean-to building formerly existed against the east wall of the house, as may be seen by the string course and corbels still remaining, and foundations of other edifices have been discovered when digging for drains, &c.

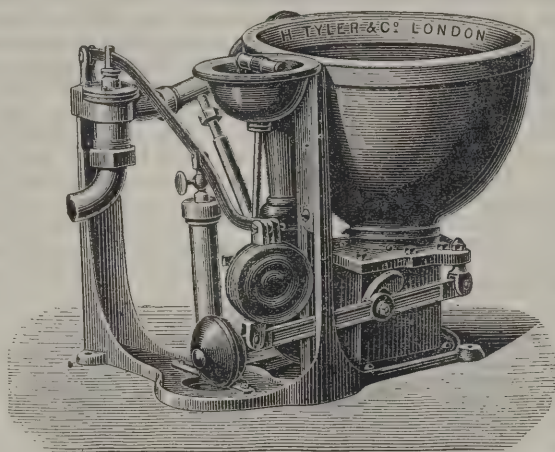
The great tithe-barn, which is still in good preservation, and is in common use, is a large and picturesque building, 123 feet in length by 25 feet wide. It was erected about the same period as the courthouse. It is built of the native blue clay stone with freestone dressings. The roof, which is of oak, has been much altered and modernised. There are two porches, over the doorways of which are oak lintels instead of stone arches. Parts of the old doors yet remain. As a specimen of ancient wood construction there are few in the county to equal the old vicarage building. We now see it as a perfectly symmetrical house, with two wings and a central porch facing towards the west, but one of these wings, that on the north side, was erected about fifty years ago, having been very fairly copied from the old work of the south wing. The original building consists of a very fine entrance-porch, a good hall with kitchen and offices on the ground-floor, with bedrooms over each of these. The framing and decoration of the woodwork of this house are singularly fine and interesting, any written description of which would be of little use; measured drawings and sketches are quite requisite in order to properly explain the character of the work. The porch, with its grand old door and wicket and ceiling, the strong-framed ceiling of the hall and other rooms, and the various and bold enrichments, are all well worthy of careful study.

**Public Baths and Washhouses**, erected by Messrs. Hammond & Co., contractors, from the designs of Mr. Freeman, of Dublin, were opened in Tara Street, Dublin, on Monday.

## NOTES ON NOVELTIES.

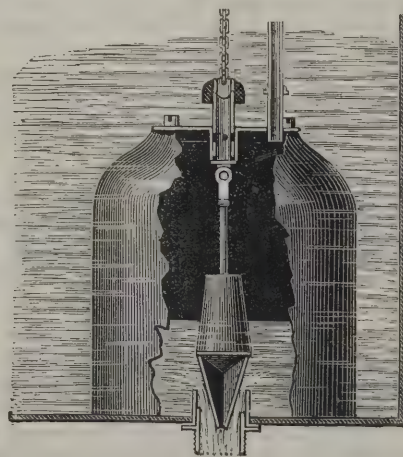
### Hayward Tyler & Co.'s New "Extra Quality" Valve-Closets.

MESSRS. HAYWARD TYLER & CO., of 84 & 85 Whitecross Street, London, E.C., have lately brought out a new type of valve-closets which appear to be the best that are yet in the market. The fittings are of unusual strength and finish, being made in many cases of gun-metal in place of brass, with every improvement that long experience could suggest. The overflow pipe enters the box behind the valve, so as to avoid the chance of soil washing up into it when the valve is opened. The trap of the overflow is kept charged by a pipe from the main supply each time the closet is used. The dish and handle are of earthenware, and of large size. One important feature in these closets is the great attention that has been given to



insuring the best possible form of basin for perfect flushing, and to the decoration of the basin, dish, and handle, which are all made of best earthenware, and are all printed alike, so as to give a remarkably handsome effect when the closet is fixed. The patterns for this decoration are very carefully chosen, and show real taste applied to this necessary adjunct to our modern houses. These closets are well worthy the careful attention of architects and of such builders and plumbers as aim at procuring the best articles that can be procured. We may add that the prices appear very moderate, varying somewhat according to the pattern of the decoration. Architects wishing to have these closets used in their buildings should specify them as "Hayward Tyler & Co.'s extra quality valve-closets, with decorated basins and dishes."

Messrs. Hayward Tyler & Co. have also brought under our notice another novelty in "Campion's Water-waste Preventer," the action of which will be seen from the accompanying diagram. The following advantages will be found a great recommendation for its use, viz., that they can be readily



adapted to any existing closet, being easily fixed at a small cost; that they are out of sight, noiseless and certain in action, and have been passed by the New River Company; that no contamination of water in the cistern is possible, although the communication with the closet is direct; and that, whether viewed from the standpoint of economy, efficiency, or durability, they alike commend themselves to the attention of architects, builders, and plumbers.

**The Holloway Sanatorium**, Virginia Water, will be opened formally on June 15.



## CHURCH BUILDING AND RESTORATION.

**Coddenham.**—A committee has been formed to collect subscriptions and receive plans, specifications, &c., for work to be carried out under Mr. E. F. Bisshopp, diocesan surveyor, at the church of Coddenham. In his report, speaking of the roof, Mr. Bisshopp says an examination of the interior shows very serious separation of the whole of the timbers. The hammer beams have sagged to such an extent that the greater part of the tenons are drawn out of the braces and wall pieces, and the pins are snapped, and most of the timbers are kept together by wrought-iron straps. A deal collar-beam at the level of the upper hammer-beam has been introduced, and on examination of the exterior showed the reason for its introduction, viz., to prevent the total collapse of the roof owing to the dangerously slight bearing on the walls and the hammer-beams, and consequent serious condition of the timbers. Indeed, the hammer-beams can now be scarcely said to bear on the walls at all, except on the inner edges, and as the ends are seriously decayed their security becomes yearly less. There is a wall-plate on the south side 6 inches square, but it is about half rotten, and is not attached to the rest of the timbers, except to the common rafters. A similar wall plate originally existed on the north side, but this has entirely disappeared, leaving merely a heap of dust in its place. Consequently here the feet of the common rafters have no bearing, being morticed into the lower purlins; it would be quite possible for portions of the rest to give way bodily on any extra weight being applied. The cornice is rotten in places, particularly at the ends, where it is fixed into the principals, and I noticed one length which was held up by nails driven into the sides of the principals. The bosses at the feet of the well-pieces are insecure; the timbers themselves, except those as named above, are not seriously decayed, and the lead-work is in a very fair state, though becoming thin in places. I am of opinion the wood is chestnut. The parapets, both north and south, are in a very weak and decayed condition, and on the south side particularly the water has access to the interior of the walls. I am of opinion the condition of the roof is very serious, if not absolutely dangerous, and no time should be lost in its thorough restoration.

**Edale.**—The foundation-stone of the new Church of Holy Trinity, Edale, near Chapel-en-le-Frith, has been laid at Grinsbrook. Mr. W. Dawes, of Manchester, is the architect, and Mr. T. Beck, of Matlock Bridge, the builder. The church will accommodate two hundred persons. The estimated cost, with tower, spire, boundary walls, &c., is 2,557*l*.

**Farnworth.**—Excavations have been commenced for laying the foundations of a new church proposed to be built off Longcauseway, Farnworth, to be dedicated to St. Peter. The new church will be from designs by Mr. R. K. Freeman, F.R.I.B.A., of Bolton. Messrs. Coope Bros. are the contractors.

**Harrington.**—A Wesleyan chapel has been opened. Mr. W. G. Scott, of Workington, was the architect, and the contractors were:—Mason work, Mr. L. Ferguson, Workington; joiner work, Mr. John Simon, Harrington; slating, Mr. T. Mandale, Maryport; plastering, Mr. Thomas Black, Harrington; plumbing and gas-fitting, Mr. D. M. Walker, Workington; painting and glazing, Mr. Joseph Pratt, Harrington; ironwork, Mr. J. Milburn, Workington.

**Smethwick.**—The memorial-stones of a Methodist chapel have been laid. The building is to seat 590 persons. The cost is estimated at 1,400*l*. The architect is Mr. J. H. Burton, of Ashton-under-Lyne, and the builders are Messrs. H. Dorset & Son, Cradley Heath.

**Wolverhampton.**—St. Paul's Church has been reopened after improvement. The work has been done by Mr. Cockerill, under the direction of the architect, Mr. Veall, of Wolverhampton.

## SCHOOL BUILDINGS.

**Birstal.**—A large Wesleyan Sunday-school is to be erected at Birstal from the designs and plans of Mr. Walter Hanstock, A.R.I.B.A., of Batley. Contracts for the work have been accepted, amounting to about 2,800*l*. The school will contain no less than twenty-seven classrooms of various sizes.

**Carlisle.**—The memorial-stones of a Wesleyan Sunday-school and lecture-hall have been laid. The architect is Mr. J. Taylor Scott, of Carlisle. Preparations have been made for ventilation by Sheringham's inlet valves and Boyle's patent exhaust ventilators. The contractors are Mr. Gilbert Hill, builder, and Mr. James Hewitt, joiner; and the sub-contractors—Mr. Muncaster, plumber; Mr. Ferguson, plasterer; Mr. C. J. Nanson, slater; and Mr. Denard, painter and glazier.

**Huddersfield.**—The memorial-stone of a new junior mixed department to the Mount Pleasant Schools, Huddersfield, has been laid by Mr. J. E. Williams, J.P., chairman of the Works and Finance Committee of the Huddersfield School Board.

The original school was erected about ten years since. The new department will accommodate 460 children of both sexes in the first and second standards. There is also a room for teaching cookery to fifty of the elder girls. In the new department are included extensive covered playgrounds, and also covered playsheds for the infants' department, and sundry alterations to improve the old buildings. Contracts have been entered into to the amount of 5,411*l*. The style of the building is Early Gothic. The architects are Messrs. Henman & Harrison, of 64 Cannon Street, London, E.C.

**Ripponden.**—The memorial-stones of a Wesleyan Sunday and day school have been laid at Stones, Ripponden. The school is being erected from the designs of Mr. J. Crawshaw, architect, of Ripponden.

**Walthamstow.**—The foundation-stone of St. Michael and All Angels Sunday-school has been laid. The building is from the designs of Mr. J. M. Bignall, architect, of Clapham, the builder being Mr. J. S. Scott, of London Wall, E.C., and Walthamstow.

**Woodford (Essex) School Board.**—This Board having decided to enlarge their Churchfield schools, consulted Mr. Edward Tidman, C.E. (who has, as surveyor to the London and Suburban Sanitary Survey Association, just carried out a new system of ventilation and sanitation at these schools), and instructed him to prepare plans of a new infant school to accommodate 200 children. These plans were examined by the Board at their meeting on Friday last and approved, the architect being instructed to obtain the approval of the Educational Department, and to obtain tenders for the work to be submitted to a future meeting of the Board.

## GENERAL.

**An Art Treasures Exhibition**, similar to that held in Manchester in 1857, and subsequently at Leeds, Dublin, and Wrexham, is proposed to be held next year at Folkestone.

**M. Bonnat** has taken a sketch, and **M. Dalou** a cast, of the features of the deceased Victor Hugo.

**A Local Art and Industrial Exhibition** is proposed to be held at Lambeth, in aid of the fund for enlarging the parochial schools in two of the riverside parishes. The School of Art will be well represented.

**Oldwinstford Church, Stourbridge**, is to be renovated and repaired under the direction of Mr. Robinson, architect.

**Mr. Henry Patja** will read a paper at the meeting of the Society of Engineers on Monday on "Portland Cement."

**Some Antique Objects**, consisting mainly of fragments of Greek fictile art and statuettes, discovered by Mr. Petrie in his excavations at Naukratis, Lower Egypt, have just been unpacked at the British Museum.

**A Bridge** erected in place of the old wooden structure over the river Echaig (head of Holy Loch), Dunoon, from designs by Messrs. Bell & Miller, C.E., has just been opened. Messrs. Hanna, Donald & Wilson, Paisley, were the contractors.

**The Staffordshire Field Club** have paid a visit to Stoke-upon-Trent, and inspected the various pottery works.

**The Mayor of Lincoln**, Mr. J. Clarke, has announced his intention of building St. Hugh's Catholic Church and Presbytery in Silver Street, Lincoln. It is understood that the cost will be about 14,000*l*. Mr. Albert Vicars, of 151 Strand, is the architect.

**Mr. P. W. Barlow, C.E.**, died at his residence, Lansdowne Road, Notting Hill, on the 20th inst., aged 76 years.

**A Company** has been formed for the purpose of building, in neighbourhoods where there is an urgent want of such accommodation, dwellings for the artisan class which will combine the most perfect sanitary arrangements with a certain element of architectural effect, so as to avoid the barrack-like appearance so generally objected to.

**The Right Hon. the Lord Mayor** has signified his intention of receiving and entertaining the members of the Municipal and Sanitary Association of Engineers and Surveyors on the occasion of the annual meeting, which is to be held in London at the end of June.

**Messrs. Medland & Son**, architects, Gloucester, have prepared plans for new Board schools at Tredworth.

**The Court of Common Council** intend to obtain designs from four eminent artists for equestrian statuary to be placed on the pedestals at Blackfriars Bridge, for selection therefrom of four subjects.

**The laying of the Track** on the last unfinished section of the Canadian Pacific Railway, near Jackfish Bay, has been completed. The rails have now been laid continuously from Halifax in Nova Scotia to the coast of British Columbia.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, MAY 30, 1885.

## NOTICE TO THE PUBLIC.

By the Post Office arrangements THE ARCHITECT can now be sent to any part of the United Kingdom by an affixed Halfpenny stamp; hitherto the postage has very frequently been twopence per copy. The Publishers will be happy to forward, for 19s. 6d. per annum, post paid, THE ARCHITECT, to residents in towns and neighbourhoods to which there is no easy access by railway. Terms for the half-year, 10s.

Our readers are invited to address us on subjects of interest to themselves or the public. We shall be always ready to insert letters asking for a solution of any suitable questions of a professional or practical nature, and to receive replies to such inquiries.

## CONTRACTS OPEN.

**BALLINDINE.**—June 3.—For Building Dispensary House and Residence. Mr. Glover, C.E., County Surveyor, Board of Guardians' Room, Claremorris.

**BANDON.**—June 8.—For Construction of Water Works. Mr. James Price, C.E., 44 Harcourt Street, Dublin.

**BILBAO.**—June 26.—For Building Theatre. Messrs. Yeves & Co., 24 Fenchurch Street, E.C.

**BRADFORD.**—June 3.—For Alterations to Hill Side House. Mr. C. H. Hargreaves, Architect, Raven Bank Chambers, Bradford.

**BRIGHOUSE.**—June 1.—For Building Coal and Cannel Stores, Station Meter House, Refining Wall, Purifier House, and Lime Store, and for Columns, Girders, Four Purifiers, with covers, &c., Cover-lifting Apparatus, and Wrought-iron Roof. Mr. James Parkinson, Engineer, Brighouse.

**BRIGHOUSE.**—June 5.—For Building House. Messrs. G. Hepworth & Son, Architects, Brighouse.

**BURY.**—May 30.—For Additions to Walshaw Hall. Mr. J. Farrar, C.E., 12 Market Street, Bury.

**CARNFORTH.**—June 12.—For Building Four Shops and Business Premises. Mr. S. Shaw, Architect, Kendal.

**CHESTERFIELD.**—June 6.—For Alterations to Post Office. The Postmaster, Chesterfield.

**CHINLEY.**—June 2.—For Building Board School, with Boundary Wall, Entrance Gates, &c. Mr. C. W. Johnson, Architect, Whalley Ridge.

**DARTFORD.**—June 6.—For Erection of Building to accommodate Staff, Engine-house, and Extension of Laundries, Long Reach. Messrs. H. Jarvis & Son, Architects, 29 Trinity Square.

**CLOWNE.**—June 3.—For Building Semi-detached House and Additions to Business and other Premises. Mr. Herbert Hodgson, Architect, 68 High Street, Queensbury.

**CRICCIETH.**—June 1.—For Building Nave and other Portions of Church. Messrs. Douglas & Fordham, Architects, 6 Abbey Square, Chester.

**DEWSBURY.**—June 3.—For Construction of Reservoir. Messrs. Bateman & Hill, C.E., Albert Chambers, Albert Square, Manchester.

**DENBY DALE.**—May 30.—For Enlarging and Re-furnishing Primitive Methodist Chapel. Mr. T. T. Howdell, Architect, 40 Park Lane, Leeds.

**DEWSBURY.**—June 5.—For Building Branch Store. Mr. Henry Holtom, Architect, Bond Street, Dewsbury.

**DEWSBURY.**—June 5.—For Extension of Board School. Mr. Henry Holtom, Architect, Bond Street, Dewsbury.

**DONEGAL.**—June 3.—For Erection of Dwellings, Gasworks, Fog-signal House, &c., at Tory Island Lighthouse. Messrs. Gribbon & Butler, Quantity Surveyors, 22 Lombard Street, Belfast.

**DROGHEDA.**—June 4.—For Building Labourers' Cottages. Mr. Peter Dowdall, Board of Guardians' Room, Drogheda.

**DUBLIN.**—June 3.—For Building Ten Labourers' Cottages. Mr. P. F. Leonard, Architect, 34 Lower Ormond Quay, Dublin.

**ECCLESHILL.**—June 8.—For Building School. Mr. Wilson Bailey, Architect, 9 Market Street, Bradford.

**EDINBURGH.**—June 1.—For Building Board School. Mr. Robert Wilson, Architect, 2 Queen Street, Edinburgh.

**EDINBURGH.**—June 6.—For Construction of Wrought-iron Girder Gangway. Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

**ELLAND.**—June 4.—For Building Fireproof Mill, Engine and Boiler-houses, Dule Room Chimney, &c. Messrs. Horsfall & Williams Architects, Post Office Buildings, Halifax.

**FORTINGAL.**—June 1.—For Building Kennels, Chesthill. Mr. J. Hamilton, Chesthill, Fortingal.

**GAWTHORPE.**—June 1.—For Building Two Houses. Mr. F. W. Ridgway, Architect, Church Street, Dewsbury.

**HALIFAX.**—June 6.—For Erection of Farm-house and other Buildings, Exley Bank Top. Messrs. Jackson & Fox, Architects, 22 George Street, Halifax.

**HEBBURN QUAY.**—June 13.—For Building Board School, Teacher's and Caretaker's Houses. Mr. G. Mason, Clerk to the School Board, Ellison Street, Jarrow.

**HEREFORD.**—For Alterations and New Fronts at the High Town Corner. Mr. W. W. Robinson, Architect, 21 King Street, Hereford.

**HORSFORTH.**—June 1.—For Enlargement of Woodside Schools. Mr. James B. Fraser, Architect, Leeds.

**HOVE.**—June 6.—For Erection of Ornamental Iron Fence (Designs and Tenders). Mr. C. A. Woolley, Town Clerk, Hove, Brighton.

**HYDE.**—June 3.—For Erection of a Stage-floor Retort-house, at the Gasworks. Mr. Thomas Newbigging, C.E., No. 5 Norfolk Street, Manchester.

**HUDDERSFIELD.**—June 3.—For Building Two Dwelling-houses. Mr. J. Berry, Architect, 9 Queen Street, Huddersfield.

**KEMNAY.**—June 3.—For Building House, West Lauchintilly. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

**KIRKCALDY.**—June 5.—For Construction of Wet Dock and Railways in connection in the County of Fife. Mr. John Macrae, C.E., 107 Princes Street, Edinburgh.

**KNIGHTON.**—June 3.—For Erection of Work-house Buildings. Mr. E. H. Deacon, Clerk to the Guardians, Knighton, Radnorshire.

**KNOWLE, FAREHAM.**—June 9.—For Building Group of Cottages at the County Asylum. Mr. James Robinson, County Architect, County Hall, Winchester.

**LANCASTER.**—June 4.—For Building Sanatorium for Royal Grammar School. Mr. W. Wright, Surveyor, Lancaster.

**LEEDS.**—May 30.—For Building Liberal Club. Messrs. Smith & Tweedale, Architects, 12 South Parade, Leeds.

**LISMORE.**—June 3.—For Building Sixty-one Cottages. The Clerk to the Guardians, Lismore.

**LIVERSEDGE.**—June 1.—For Engines, Boiler, Machinery, and Apparatus for Sewage Works. Mr. Charles Gott, C.E., 8 Charles Street, Bradford.

**LYNDHURST.**—June 14.—For Building Lych-gate to Burial Ground. Mr. S. Coxwell, Crown Buildings, Lyndhurst.

**MARSH.**—June 2.—For Building Eight Cottages. Mr. J. E. Moseley, Architect, 4 Wellington Buildings, Huddersfield.

**MERRINGTON.**—June 6.—For Building Stone Wall, Cow-byre, Coalhouse, and Washhouse. Mr. J. Lee, Surveyor, Cradock Street, Bishop Auckland.

**MONYMUSK.**—June 3.—For Building Dwelling-houses and Offices. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

**MYTHOLMROYD.**—May 31.—For Building Working Men's Club at Cragg. Mr. W. H. Cockroft, Architect, Hanging Royd Road, Hebden Bridge.

**NAAS.**—June 10.—For Works at Town Hall. Mr. J. T. Gough, Town Clerk, Naas.

**PONTARDULAIS.**—June 1.—For Restoration of St. Teilo's Church. The Vicar, Pontardulais.

**PONTYPRIDD.**—June 2.—For Additions and Alterations to Union Workhouse. Messrs. James, Seward & Thomas, Architects, St. John's Chambers, Cardiff.

**PONTYPRIDD.**—June 4.—For Building Chapel. Mr. Kingdom, New Foundry Road, Hopkinstown, Pontypridd.

**PRESTON.**—June 4.—For Rebuilding and Extension of Holy Trinity Church, Hoghton. Mr. J. Bertwistle, Architect, 1 Tacketts Street, Blackburn.



**PUDSEY.**—June 2.—For Extensive Additions to Prospect Mills. Mr. Jowett Kendall, Architect, Idle, near Bradford.

**ROCHDALE.**—June 9.—For Erection of Clock Tower and parts of Town Hall. Mr. A. Waterhouse, A.R.A., 20 New Cavendish Street, W.

**SHEFFIELD.**—June 2.—For Building Boys' Department at Crookesmoor School. Mr. C. J. Innocent, Architect, 17 George Street, Sheffield.

**SOUTHWICK.**—June 4.—For Building Boundary and Retaining-walls. Mr. J. Eltringham, 62 John Street, Sunderland.

**STAMFORD.**—For Building Shop, Stables and Warehouses. Messrs. Richardson & Son, Architects, 15 Barnhill, Stamford.

**ST. ASAPH.**—June 10.—For Erection of Boiler-house, Scullery, Cornish Boiler, Steaming-pans, Drying-closet, Water-tank, &c., &c. Mr. Robert Jones, Union Workhouse, St. Asaph.

**STOCKWELL.**—June 5.—For Repairs, External Painting, &c., at South-Western Fever Hospital. Mr. M. Wyatt, Architect, 77 Great Russell Street, Bloomsbury Square, W.C.

**STOKE-ON-TRENT.**—May 30.—For Building Manager's House for Tramways Co. Mr. G. W. Bradford, Architect, Miles Bank Chambers, Hanley.

**STOURBRIDGE.**—June 11.—For Construction of Works of Sewerage, Upper Swinford. Mr. W. Fiddian, Surveyor, 98 High Street, Stourbridge.

**SWINDON.**—June 6.—For Building Baptist Tabernacle and Schools. Mr. W. H. Read, Architect, Corn Exchange, Swindon.

**SYDNEY.**—June 1.—For Steel Bridge to Carry Double Line of Railway over the River Hawkesbury. Mr. S. Samuel, Agent-General for New South Wales, 5 Westminster Chambers, S.W.

**TOWCESTER.**—June 10.—For Alterations and Additions to Malt Houses. Messrs. H. Stopes & Co., Architects, 24A Southwark Street, S.E.

**THORNTON-LE-FEN.**—June 3.—For Building Class-room, &c., to Board School. Mr. Henry Bates, Boston.

**TEDDINGTON.**—June 1.—For Erection of Suspension Footbridge over the Thames, and Lattice Girder Footbridge over Lock Cut. Mr. George Pooley, 26 Charing Cross, S.W.

**THURSO.**—May 30.—For Works in Connection with Building Stone Bridge. Messrs. MacBey & Gordon, C.E., Elgin.

**TODMORDEN.**—May 30.—For Building Chancel, Vestries, &c., to Parish Church. Mr. J. Horsfall, Architect, Todmorden and Rochdale.

**USWORTH COLLIERY.**—June 1.—For Building Methodist Church. Mr. T. E. Davidson, Architect, Albany Chambers, South Shields.

**WADSLEY.**—June 1.—For Building Dwelling-house and Stables. Messrs. Flockton & Gibbs, Architects, 15 St. James's Row, Sheffield.

**WELLINGTON.**—June 7.—For Building Bank Premises. Mr. E. T. Howard, Architect, North Street, Wellington, Somerset.

**WEOBLEY.**—May 30.—For Building Casual Wards at the Workhouse. Mr. H. A. G. Samson, Clerk to the Guardians, Weobley.

**WEST HARTLEPOOL.**—June 3.—For Building Smiths' Shop, Storehouse, Office, &c., at the Graving Dock. Mr. William Bell, Architect, Newcastle.

**WHITECHAPEL.**—June 2.—For Two Water-closets, Alterations to Windows, Whitewashing, Painting, &c., at Infirmary. Mr. W. A. Longmore, Surveyor, 7 Great Alie Street, Whitechapel.

**WINDERMERE.**—June 6.—For Building Block of Warehouses, Stable, Carthouse and Bakery. Mr. Robert Walker, Architect, Windermere.

**WISHAW.**—June 3.—For Construction of Storage Reservoirs and Works in connection. Mr. James Tait, C.E., Wishaw.

**WORKINGTON.**—May 30.—For Building Infirmary. Mr. G. D. Oliver, Architect, Bank Chambers, Carlisle and Pow Street, Workington.

**WROUGHTON.**—May 30.—For Works at Board School. Mr. H. Coppleston, Clerk to the Board, Swindon Road, Wroughton.

## TENDERS.

### ALNWICK.

|   |     |      |
|---|-----|------|
| For Work to Footways, Alnwick. Mr. GEOFFREY WILSON, Surveyor. |     |      |
| Wilson & Son  | £79 | 0 0  |
| Armstrong   | 73  | 4 0  |
| Davison & Son   | 68  | 5 0  |
| Weatheritt  | 57  | 0 0  |
| Whinham   | 56  | 18 0 |

All of Alnwick.

### ASTON MANOR.

|  |      |      |
|--|------|------|
| For Works in Vine Street, Aston Manor. Mr. W. A. DAVIES, Surveyor. |      |      |
| Hughes & Co., Cannock  | £290 | 0 0  |
| Jones & Fitzmaurice, Birmingham                                    | 250  | 0 0  |
| B. Pearson, jun., Birmingham                                       | 240  | 0 0  |
| Curral & Lewis, Birmingham   | 239  | 0 0  |
| W. Heaps, jun., Birmingham   | 234  | 17 6 |
| Innes & Wood, Birmingham   | 214  | 0 4  |

### BATH.

|   |      |     |
|---|------|-----|
| For Laying Cast-iron Water Mains in Oldfield Park and Sion Hill. Mr. A. MITCHELL, Engineer. |      |     |
| JENNINGS, Bath (accepted)   | £150 | 0 0 |

### BATLEY.

|  |  |  |
|--|--|--|
| For Building Independent Mission Room, Soothill. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley. |  |  |
|--|--|--|

#### Accepted Tenders.

|   |      |      |
|---|------|------|
| Goodall, Batley, mason                        | £254 | 0 0  |
| Brooke, Batley, joiner                        | 197  | 0 0  |
| Thornton, Shipley, slater                     | 38   | 17 0 |
| Metcalfe & Lockwood, Heckmond-wike, plasterer | 24   | 0 0  |
| Wright, Batley Carr, plumber                  | 18   | 18 0 |

Total . . . £532 15 0

### BELFAST.

|  |      |     |
|--|------|-----|
| For Construction of a Steam Boiler for the Pumping Machinery of the Clarendon Graving Docks, Belfast Harbour. Mr. T. B. SALMOND, Engineer. |      |     |
| GRANT (accepted)   | £140 | 0 0 |

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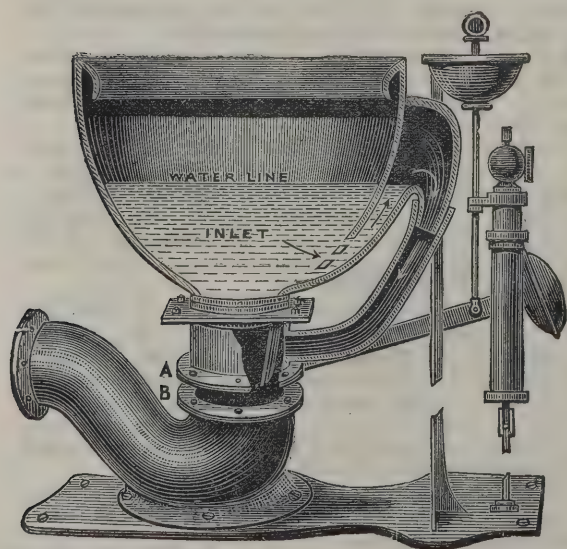
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## THE "SAFETY" VALVE WATER-CLOSET,

WITH

Conolly's Reversible Trap (Patent No. 3,754).

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weepin pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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WAREHOUSES—TOLMERS SQUARE, N.W.



**BERWICK-ON-TWEED.**

For Erection of Norham Bridge, for the Tweed Bridges Trust.  
Five tenders were received, varying from £9,318 to £11,010.

**BIRSTAL.**

For Building proposed Wesleyan Sunday Schools, Birstal. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley.

*Accepted Tenders.*

|   |            |
|---|------------|
| G. & J. Holdsworth, Moor Side,              |            |
| Gildersome, mason                           | £1,476 0 0 |
| Armitage, Birstal, plumber                  | 1,089 0 0  |
| Wilkinson & Dawson, Bradford, joiner        | 886 0 0    |
| Metcalf & Lockwood, Heckmondwike, plasterer | 219 0 0    |
| Thornton, Shipley, slater                   | 125 0 0    |

Total . . . £2,814 9 0

**BOYLE.**

For Sinking Wells and Erecting Pumps, at per lineal foot, for the Guardians of Boyle Union.

PRIEST, Knockroe (accepted) . . . £190 0 0

**BRACKLEY.**

For Works of Restoration at Parish Church, Brackley. Mr. JOHN OLDRID SCOTT, Architect.

HAWKINS (accepted) . . . £2,000 0 0

**BRIGHTON.**

For Alterations and Additions to Headquarters of the 1st Sussex Artillery Volunteers. Mr. W. PUTTICK, Architect, 17 Prince Albert Street, Brighton.

|                      |           |
|----------------------|-----------|
| Reynolds, jun.       | £389 15 0 |
| Longley              | 374 0 0   |
| Cheesman & Co.       | 365 0 0   |
| Newnham              | 349 0 0   |
| Cox & Sons           | 349 0 0   |
| Carpenter            | 325 0 0   |
| WRIGHT (accepted)    | 314 0 0   |
| Architect's estimate | 365 0 0   |

All of Brighton.

**BRIGHTON—continued.**

For Erection of Proposed Lecture-hall and Coffee-tavern at West Brighton. Mr. T. SIMPSON, Architect, 16 Ship Street.

**Part 1.**

|                                |            |
|--------------------------------|------------|
| Newnham, Brighton              | £3,685 0 0 |
| Bruton, Brighton               | 3,440 0 0  |
| Hall & Hunnisett, East Hoathly | 3,305 0 0  |
| Nurcombe & Butcher, Hove       | 3,300 0 0  |
| Cresswell, Hove                | 3,297 0 0  |
| Parsons & Son, Hove            | 3,260 0 0  |
| Longley, Crawley               | 3,224 0 0  |
| Collins, Hove                  | 3,150 0 0  |
| Barnes, Brighton               | 3,143 0 0  |
| Peters, Horsham                | 3,117 0 0  |
| Taylor, Brighton               | 3,100 0 0  |
| Chappell, London               | 2,994 0 0  |
| Cheesman & Co., Brighton       | 2,940 0 0  |
| Hudson & Kearley, Brighton     | 2,882 0 0  |
| SAWLE, Worthing (accepted)     | 2,825 18 8 |
| Reynolds, jun., Brighton       | 2,800 0 0  |

**Part 2.**

|                    |            |
|--------------------|------------|
| Nurcombe & Butcher | £2,300 0 0 |
| Cresswell          | 2,170 0 0  |
| Bruton             | 2,120 0 0  |
| Collins            | 2,050 0 0  |
| Longley            | 2,045 0 0  |
| Parsons & Son      | 2,030 0 0  |
| Cheesman & Co.     | 1,980 0 0  |
| Peters             | 1,966 0 0  |
| Barnes             | 1,926 0 0  |
| Taylor             | 1,900 0 0  |
| SAWLE (accepted)   | 1,880 13 7 |
| Chappell           | 1,838 0 0  |
| Hudson & Kearley   | 1,787 0 0  |
| Reynolds, jun.     | 1,675 0 0  |

**CHAPEL ST. LEONARDS.**

For Road Works, Chapel St. Leonards, Lincolnshire. Mr. J. T. HENSON, Surveyor, Gresham Chambers, Nottingham.

|                                |          |
|--------------------------------|----------|
| Hunter & Booth, Didsbury       | £720 0 0 |
| Dawson, Lincoln                | 586 0 0  |
| Bradley, Lincoln               | 530 0 0  |
| Adams, London                  | 520 0 0  |
| Hibbitt & Deforges, Alford     | 519 16 0 |
| Simmonds, Skegness             | 493 9 3  |
| Cook, Bennett & Thew, Spalding | 460 0 0  |
| Spriggs, South Lynn            | 450 0 0  |

**CARDIFF.**

For Erecting One House at Cadoxton for Mr. Rimnel. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.  
RIMNEL (accepted).

For Building Two Houses at Cadoxton for Mr. Phillips. Mr. SYDENHAM W. RICHARDS, Architect, Herbert Chambers, Cardiff.  
WOODHOUSE (accepted).

**CHIGWELL.**

For Building Boys' School and Master's House at Chigwell, for the Chigwell School Board. Mr. EDMOND EGAN, A.R.I.B.A., Architect, Loughton. Quantities by the Architect.

|                   |            |         | Extra, Wood-block Flooring. |
|-------------------|------------|---------|-----------------------------|
| Kemp Coleman      | £2,320 0 0 | £60 0 0 |                             |
| Stewart           | 2,253 18 0 | 60 0 0  |                             |
| Hack              | 2,184 0 0  | 75 0 0  |                             |
| Staines & Son     | 2,132 0 0  | 66 0 0  |                             |
| Dobson            | 2,080 0 0  | 50 0 0  |                             |
| Howell & Sons     | 2,050 0 0  | 43 0 0  |                             |
| Webb              | 2,045 0 0  | 100 0 0 |                             |
| Harper            | 2,019 0 0  | 25 0 0  |                             |
| Knight            | 1,994 0 0  | 28 0 0  |                             |
| England & Thomson | 1,993 0 0  | 96 0 0  |                             |
| Foster            | 1,991 17 0 | 43 1 6  |                             |
| Priestly & Gurney | 1,970 0 0  | 99 0 0  |                             |
| Egan              | 1,920 0 0  | 59 10 0 |                             |
| Parker            | 1,898 0 0  | 74 0 0  |                             |
| Coulsell Bros.    | 1,896 0 0  | 105 0 0 |                             |
| Barnes            | 1,847 0 0  | 51 0 0  |                             |
| WELLS (accepted)  | 1,814 10 0 | 87 0 0  |                             |

**COLCHESTER.**

For Building House in North Street, Colchester, for Mr. S. B. Lissimore, Wholesale Tobacconist. Mr. WALTER SCARGILL, Architect, Colchester. Quantities by Mr. G. Page, Culver Street, Colchester.

|                   |          |
|-------------------|----------|
| Scott             | £308 0 0 |
| Lee               | 280 0 0  |
| Ambrose           | 266 0 0  |
| Shepherd          | 265 0 0  |
| Gladwell          | 245 0 0  |
| Dupont            | 244 0 0  |
| Bowles (accepted) | 218 15 0 |

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*This Gully possesses the following advantages:—*

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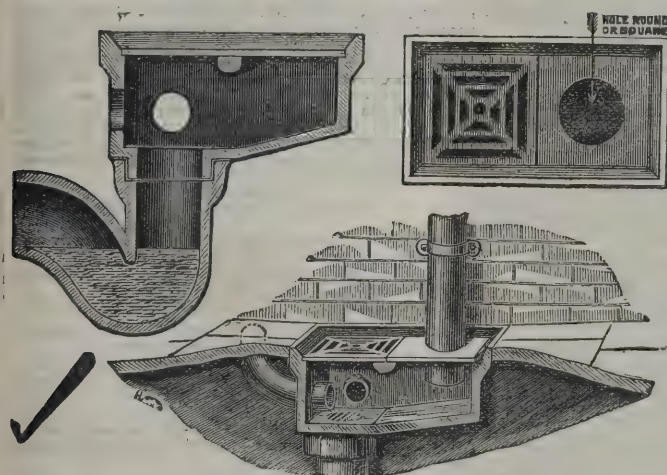
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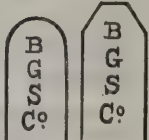
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**CHEDDLETON.**

For Additions and Alterations to Churnet Grange, Cheddleton, for Captain Colville. Messrs. W. SUGDEN & SON, Architects, Leek. Quantities by the Architects.  
COLLIS, Longton (accepted) . £491 10 0

**COVENTRY.**

For Works of Restoration, St. Michael's Church, Coventry. Mr. J. OLDRID SCOTT, Architect.  
Thompson, Peterborough . £31,853 0 0

*Detailed Items of Estimate.*

The Tower and Lantern Stage (without the internal restoration) . £15,980 0 0  
The Interior of the Tower, Groining, and Floors over it (the wooden framework becoming the contractor's property, to be used in the restoration of the roofs) . 1,398 0 0  
The Spire, including Rebuilding the Upper Part, Lighting Conductor, &c. . 1,262 0 0  
Total of Tower and Spire . £18,640 0 0

The Chancel and Apse, with the Aisles to Apse . 5,355 0 0  
The Nave Roof, Clerestory, and Parapets . 4,308 0 0  
The Aisles and Chapels to the South of Nave and Chancel . 1,698 0 0  
The Vestries . 795 0 0  
The Aisles to the North of Nave and Chancel . 757 0 0  
The South Porch and certain Gutters round the Walls . 300 0 0

Total . . . £13,213 0 0

**EDINBURGH.**

For Additions to Cottage, Powderhall, Edinburgh.  
CORMACK (accepted) . . £108 10 0  
Fourteen Tenders sent in.

**EASTHAMPTSTEAD.**

For Cleansing and Lime-washing Wards, &c., at Workhouse, Easthamptstead.  
Lloyd, Crowthorne . . £17 0 0  
Dix, Bracknell . . 15 15 0  
HIPPERSON, Easthamptstead (accepted) . . 13 0 0

**ELGIN.**

For Additions (joiner and ironwork) to Farm Steading, Easterton. Mr. H. MACKAY, Architect, Elgin,

*Accepted Tenders.*

George, joiner.  
Walker, Robb & Co., iron-roofing.

**GAINSBOROUGH.**

For Construction of Reservoir, Gainsborough.  
Outram, Belton . . £1,450 0 0  
Crofts, Gainsborough . . 1,243 0 0  
Hill Bros., Gainsborough . . 940 0 0  
Cordon, Burton Joyce Hall . . 884 0 0  
Roberts, Cleckheaton . . 700 0 0

**HALIFAX.**

For Supply of 275 Iron Hurdles, 6 feet long, for the Halifax Corporation. Mr. ESCOTT, C.E., Borough Engineer.  
Galvanised Iron Co., Birkenhead . . £382 2 8  
Halmshaw, Halifax . . 165 0 0  
Green & Son, Leeds . . 137 10 0  
Brookes & Co., Wolverhampton . . 130 12 6  
E. C. & J. Keay, Birmingham . . 123 15 0  
Bayliss, Jones & Bayliss, Wolverhampton . . 116 17 6  
Smith & Co., Whitechurch . . 116 17 6  
Warden, Birmingham . . 114 11 8  
Hill & Smith, Brierley Hill . . 110 0 0  
Hayward & Co., Wolverhampton . . 98 10 10  
Hydes & Wigfull, Sheffield . . 90 10 5  
Johnson Bros. & Co., London . . 88 4 7  
Fletcher, Wolverhampton . . 87 1 8  
MILLER & SONS, Wolverhampton (accepted) . . 85 18 9  
Simpson & Wood, Darlaston . . 80 4 2  
Matthews & Co., Wolverhampton . . 79 12 8

**HEREFORD.**

For Building Stables, Carriage Shed, Loose Boxes, Harness-room, &c., at the Cattle Market Hotel, Hereford. Mr. JOHN PARKER, City Surveyor, Hereford.  
GARDINER & SPEECHLEY (accepted) . . £425 0 0

**HEYWOOD.**

For Works for the Gas Committee, Heywood. Contract No. 1: Wrought-iron Retort-house and Coal Store Roofs, Hydraulic Mains, Foul Mains, Valves, Retort Fittings, and Ascension Pipes, &c., for 196 Retorts. Contract No. 2: Building New Retort-house, 175 feet by 60 feet; Coal Stores, 175 feet by 60 feet; Retaining Walls, &c. Contract No. 3: Building and Setting of 28 Retort Benches, 196 Retorts, and Two Chimneys for same.

*Accepted Tenders.**Contract 1.*

Strang, Ramsbottom . . £4,370 0 0

*Contract 2.*

Dennis, Bury . . . 2,663 15 0

*Contract 3.*

Drake & Co., Halifax . . 485 0 0

**IPSWICH.**

For Enlargement of the Girls' Industrial Home, Ipswich. Mr. E. F. BISSHOPP, Architect and Diocesan Surveyor.  
Thwaites . . . £3,330 0 0  
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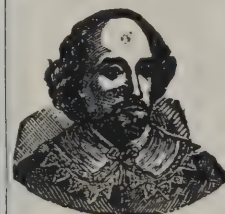
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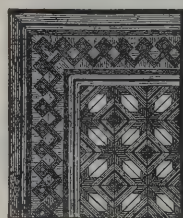
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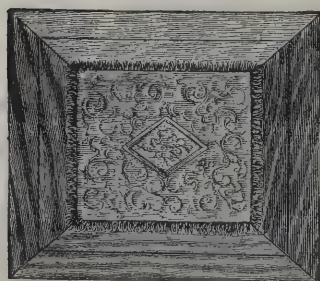
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**TRADE NOTES.**

THE whole of the basements of the new Hôtel Métropole are illuminated by the Patent pavement lights of Messrs. Hayward Bros. & Eckstein, of Union Street, Borough, S.E. The light obtained is excellent, and the result generally is most effective. The proprietors of the Hôtel Métropole had previously adopted the same system for the basements of the First Avenue Hotel, Holborn, W.C.

The chancel of St. James's Church, Handsworth, Birmingham, has received a stained east window, the gift of Mr. Joshua Horton. The window consists of four lights and tracery. The Birth, Crucifixion, Resurrection, and Ascension of Our Lord are depicted, each subject being surmounted by an elaborate canopy, and in the lower compartments of the lights are angels bearing shields with the various emblems of the Crucifixion. The tracery has been treated with a conventional arrangement of the lily and passion flower. Mr. Samuel Evans, of West Smethwick, executed the work.

A FLOWING artesian spring has just been tapped by an Abyssinian tube well, bored by Messrs. Le Grand & Sutcliffe to a depth of 72 feet at the North Northumberland Aerated Water Manufactory, Alnwick. The boring had reached the upper series of the limestone shales and sandstone when the water was struck and rose 8 feet above the surface. Owing to the hydrostatic pressure, immediate means had to be taken to prevent flooding of the neighbouring cellars.

MR. T. HILL, J.P., has presented a screen and reredos to St. Mary's Church, Nottingham. Messrs. Bodley & Garner designed the screen, which was executed by Messrs. Rattee & Kelt, of Cambridge. The screen is made of English oak. The reredos is the work of Messrs. McCulloch, of Kennington Road, Lambeth, London.

MR. WILLIAM FISHER, of Paradise Street, West Bromwich, has issued a supplementary catalogue of school desks and school furniture manufactured by him. The catalogue is well illustrated, and all the articles are shown

exactly, so that the particular piece of furniture wanted can readily be selected, the size, price, and other necessary information being added in a clear, concise manner. This old-established firm has a reputation for its manufactures, and over 800 schools have been supplied by the firm with school furniture, which includes every requisite, from teachers' desks, library tables, &c., to blackboards, umbrella-stands, &c. The registered West Bromwich convertible desk is one to be particularly commended.

**LAUNDRY AT PARTICK.**

THE Great Western Steam Laundry Company's Works situated at Crow Road, Partick, and said to be the largest in the kingdom, have been opened. The works, which are erected on the Scotstoun estate, cover an area of four acres, three of which are reserved for drying in the open air, while the fourth is covered by the laundry proper. Entering by the front and main entrance, to the right is a waiting-room, while to the left is the secretary's office and directors' room. Passing along the lobby to the right, on the left hand side are two rooms fitted with machines for cleansing carpets. Adjoining is the washing-room—136 feet long by 33 feet broad—fitted with washing machines, dash wheel, and hydro extractor. In line with this room is the drying department, where by artificial heat clothes are dried when the elements are unfavourable. Close to this is the ironing-room, measuring 100 feet by 72 feet, equipped with several Decoudun and other ironing machines. There are rooms for the special treatment of lace curtains, flannel goods, airing clothes, receiving and despatching goods, &c. The machinery is driven by an engine of 25 horse-power nominal, which is supplied with steam from two steel boilers, 26 feet long by 7 feet in diameter. Twenty-four thousand pounds have been expended on the works. The builders were P. McKissock & Co., Glasgow; the joiner, James Watson, Partick; the architect, Russell McKenzie, Aberdeen; the engineer, Alexander Leith; while Mr. Robertson, Aberdeen, superintended the construction of the large plant.

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**THE NEW PREMISES OF THE MANCHESTER AND LIVERPOOL DISTRICT BANK.**

THE new premises opened for business last week by the above bank in Southport, form one of the most important blocks of buildings in the town. They are situate at the corner of Hind Hill Street and Market Street, in the side space just opposite St. Luke's Church. The building faces both streets, the bank entrance being at the corner, and is in the Classic style of architecture, faced with stone. The banking-room is spacious and well lighted, and has windows on the sides, with neatly panelled and moulded plaster ceiling. The floor behind the counter is laid in oak blocks on concrete, and in front of the counter are ceramic mosaic tiles. The fittings are very chaste, and are in pitch pine, except the counter, which is Honduras mahogany. The vestibule to the bank is circular in plan and has a ceramic floor, as the bank, and communicates direct with the manager's consultation-room and the bank. The safe is made of steel and surrounded with thick concrete, and approached by double fireproof doors by Messrs. Chubb. This safe contains another of Messrs. Chubb's double patent cash safes. Attached to the bank is a manager's house of moderate size. The whole of the place is heated with hot water, and great care has been bestowed upon the ventilation, both as to the admission of fresh air and the extraction of foul air. The premises have been designed and carried out under the superintendence of Messrs. Maxwell & Tuke, of Manchester and Bury, by Messrs. Diggle Brothers, of Heywood.

**BOTANICAL GARDENS, BIRMINGHAM.**

THE new exhibition hall, corridors, and plant-houses lately erected at the Botanical Gardens, Edgbaston, have been opened. Ever since the palmhouse was built in 1870, it had been felt more and more desirable to complete the line of buildings on the terrace, especially as the new house was essentially a conservatory

for special plants only, and could do little towards relieving the congestion in the growing-houses. Additional conservatory accommodation, but far more additional stove and greenhouse protection, was urgently needed, and the want of this was felt more year by year as the old domehouse and its wings became more and more dilapidated. In 1883 a sub-committee was appointed with instructions "to consider the best plan for dealing with the present dome conservatory and greenhouse on either side, and the financial questions connected therewith." The sub-committee reported that the old buildings on the terrace must be removed or substantially repaired; that if removed others must be erected, or the society will suffer in prestige, and consequently in income; and that it was not advisable to attempt a partial adaptation of the old buildings in connection with new ones. On these considerations they submitted plans and estimates, showing that to efficiently repair the old houses would cost, approximately, 1,000*l.*; to erect a suitable range of new ones in their place, 3,200*l.*; and in either case about 700*l.* would be required in addition to pay off the existing debt, without making provision for which the sub-committee thought it would be useless to launch into fresh expenditure. A special committee was appointed to canvass for funds in the early part of last year, and at the general meeting in June they were happily able to report that something like 3,300*l.* was already promised. The sanction of the shareholders having been given, plans were prepared, and a contract entered into with Mr. Henry Hope, of Birmingham. The work now completed, except as to some details, comprises the exhibition hall, 54 feet by 40 feet; the corridor, 98 feet by 19 feet 6 inches; the recess to corridor, 54 feet by 21 feet; four stove and greenhouses, each about 35 feet by 24 feet, besides an entrance corridor and ladies' cloak-room, a general out-house, a boiler and stoke-hole, with new boilers and heating apparatus complete, a large stand for the orchestra, and some alterations in the house, with a complete set of sunshades. A potting-shed and a new wall to the back yard have yet to be built, and

provision made for the purchase of a large number of seats, together with other minor details. The whole of the above work already completed will cost just under 3,000*l.*, and it is hoped, after making provision for the debt of 700*l.*, that the remainder of the work yet requisite to finish up the other jobs in connection with the new buildings may be executed, so that the total sum expended shall be kept within the original estimate of 4,200*l.* Messrs. Chance Brothers, with their usual generosity, have assisted greatly in keeping down the expenses by supplying the whole of the glass at cost price.

**BUILDING FOR EARTHQUAKES.**

MR. MILNE, of the Tokio College of Engineering, Japan, says on this subject:—The buildings usually recommended are constructed of masonry bound together with cement and iron to give the greatest possible resistance to stresses of all descriptions. Structures of this order may be compared with a strongly-built box which might be rolled down the side of a steep mountain, and yet but seldom suffer injury. Houses like these have withstood the shakings we have in Tokio with fair success, but should it ever happen that they were shattered it is inevitable that disastrous consequences would attend their ruin. Another drawback to their employment is their cost. The second type of building is one constructed with wood or iron. A structure of this order, when well built, may be compared with a wicker basket which, like the strongly-built box, might also be rolled down a mountain side and sustain but little damage. In this case safety depends upon lightness and flexibility. The chief objections raised against houses like these are want of durability, dangers consequent on fire, and, in the case of large buildings, their appearance. If we take away the heavy roof of tiles we have a building of this sort in the ordinary dwelling of the Japanese. A noticeable feature in these houses is that they are not firmly attached by foundations to the earth, but rest loosely on

**THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.****VENTILATION  
WITHOUT DRAUGHT.**

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, Esq., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a siphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



squared stones or boulders buried in the ground, the result of which is to partially prevent the transmission of momentum from the moving ground to the house which rests upon it. To test how far this principle is applicable to buildings I have during the last year made observations on a house resting upon cast-iron balls. This experiment was very similar to one carried out by Mr. David Stephenson with regard to the lamp tables in several of the lighthouses on the coast of Japan. For several reasons, among which were the movements produced by wind, I abandoned the balls, and now have my house resting at each of its piers upon a handful of cast-iron shot. These shot, which are about the size of buckshot, have so increased the frictional resistance to rolling that the house is practically astatic, and the motion in the house is in most earthquakes only about one-tenth of what it is outside. In appearance the building is like other buildings. That it had freedom at its foundations would not be observed, unless specially pointed out. From these experiments I am fully convinced that light one-storeyed buildings like bungalows built of wood or iron, resting at their foundations upon layers of small cast-iron shot, may be constructed to withstand the effects of earthquakes, while neighbouring buildings are reduced to ruin.

Another result is the fact that the principal motion of an earthquake at a distance from the point immediately above its origin, is chiefly superficial. In Tokio moderately hard ground earthquakes, which have been sufficiently intense to crack a building, are hardly perceptible at the bottom of a pit 10 feet deep. The result of this discovery is leading me to make experiments on free foundations. A third plan which may be adopted as a defence against earthquakes is to make a seismic survey of the district in which we intend to build. As a result of the careful measurement of very many earthquakes, I can say that we may have three or four observatories not more than 800 feet or sometimes even 100 feet apart, at which the records for the same earthquake will be so entirely different that the diagrams of the motion at the stations will hardly present two points

in common. Here, together with numerous details of construction, there are two chief principles which may be followed. One of these is to so arrange our building that its various parts shall have similar vibrational periods. The second is to remember that we have to deal with stresses and strains applied more or less horizontally, and not with vertically applied forces such as are usually provided against in ordinary engineering formulæ. As an example of a violation of the first principle, I may mention the contact of brick chimneys with a frame building. Either, when shaken separately, may stand; but when shaken together, owing to their difference in vibrational period, they become mutually destructive. As an example of a violation of the second principle, I may point out the unstability of an ordinary brick arch to horizontal stresses, as compared with the perfection of its stability when only intended to withstand stresses due to gravity. Both of these principles I have seen violated with ruinous results, and therefore I now refer to them not as matters of theory, but as principles based upon experience.

#### PLANNING MODEL DWELLINGS.

MR. DAVIS, the manager to the Birmingham Improvement Committee, has drafted the following suggestions:—

In designing a block of dwellings for the accommodation of a large number of families, a leading feature of the plan should be the preservation of the privacy and independence of each family, and the entire disconnection of their apartments, so as to effectually prevent the communication of contagious diseases. It is also necessary that the stairs and corridors should be constructed of unflammable materials, and the houses themselves rendered fireproof by placing concrete between the floors; the latter precaution has also the effect of deadening the sound, and prevents the percolation of water from one floor to another. The plan which I have prepared shows a building four storeys in height, affording accommoda-

tion for twenty-three families, with two retail shops at the one end of the block.

Each tenement contains a sitting-room, 14 feet by 12 feet; two bedrooms, 13 feet by 10 feet, and 12 feet by 10 feet respectively; a small scullery or pantry, fitted with sink, &c.; and a closet for coals—every alternate dwelling having an extra bedroom, about 12 feet by 10 feet. A separate water-closet is provided for each family, but these are placed outside, and disconnected from the main building. To economise space, the wash-houses are placed on the roof, which can also be used for drying purposes, and as a playground for the children.

Access to the different floors will be gained by open corridors at the rear of the building, approached by a stone staircase in the centre, and as every tenement will have a separate entrance opening directly on to the corridor, the privacy of each family will be fully secured. The arrangement of the block provides for through lateral ventilation to any extent that may be desired, and as all drains will be excluded from the building, the houses cannot fail to be healthy, while the extra thickness of the walls will serve to retain the warmth to a much greater extent than in the ordinary dwellings.

I have prepared an estimate of the cost of the proposed buildings, and am of opinion the block could be erected with a plain elevation for the sum of 5,250*l*. The net income would probably amount to about 260*l*. per annum, which is equal to 5 per cent. on the outlay, and a ground-rent of 1*s*. per yard for the land would reduce the profit to the extent of 1 per cent. The success of the undertaking would depend to a great extent on the suitability of the site selected, and to make the experiment satisfactory the buildings must be placed in a central position, and free from all objectionable surroundings.

The occupation of the houses by a respectable class of tenants would tend to increase the value of the shop property in the immediate neighbourhood, and while the committee would probably have to sacrifice something in the ground-rent of the land on which the dwellings

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SILVER MEDAL, 1881.

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were erected, they would no doubt enhance the value and facilitate the letting of the adjoining land for shop purposes. It was generally contended by the witnesses who gave evidence before the Artisans' Dwellings Inquiry Committee last year, that the Birmingham workmen were averse to, and would not live in, houses erected in "flats;" but the success which has attended the adoption of the system elsewhere justifies, in my opinion, a trial of the experiment here; and, notwithstanding the fact that the average population in the model dwellings in London is a far higher one to the acre than can be found in the most densely populated parts of the metropolis, the death-rate is considerably lower, while a much larger area is reserved for ventilation and recreation purposes.

WORKMEN'S DWELLINGS.

THE Improvement Committee have prepared a report to be submitted to the Birmingham Town Council in reference to a project for building a block of dwellings on the flat system in Dalton Street. The report states that almost invariably the blocks of model dwellings have been provided either by municipal bodies or by companies promoted for the purpose; and as there does not appear to be any probability of such a company being formed in Birmingham, and bearing in mind the difficulty which exists of obtaining the assistance of private enterprise, an experiment might now wisely be tried by the Corporation, and with that object they recommend the Council to authorise an application to the Local Government Board for the requisite powers to erect dwellings for one hundred families on a portion of the land acquired under the Artisans' Dwellings Act, and also for authority to borrow a sum not exceeding 20,000*l.*, to provide the necessary capital. A portion only of these dwellings should be proceeded with in the first instance, and plans have been prepared for a block containing twenty-three tenements and two lock-up shops, the estimated cost of which is 5,250*l.* The unoccupied land in Dalton

Street appears to be the most suitable site for the purpose, and ample land would remain for the erection of other blocks if the experiment proved successful. The committee are actuated with a desire to provide dwellings of the best description as an example to be followed hereafter, and as a standard for houses for workmen of the better class, whose employment necessitates their living within easy reach of their work, and whose earnings will enable them to pay the moderate rental which will be fixed for the accommodation which it is proposed to provide. The committee anticipate that, after providing for the charges on the borrowed capital, and making the usual payments for rates and other expenses, a balance will remain to be carried to their revenue account as a ground rent for the land occupied. The demolition of the insanitary houses, and the consequent depopulation of this district, has had a prejudicial effect on the value of the shop property belonging to the Corporation in the immediate neighbourhood, and the erection of the proposed houses would, no doubt, tend to improve the letting value of these shops.

*Liverpool.*—In 1868 the Liverpool Corporation erected a block of dwellings—"St. Martin's Cottages." The cost of the block, which contains 146 tenements, was 14,756*l.*, equal to 101*l.* per dwelling, and a further sum of 3,172*l.* was paid for the site. The buildings are arranged in two, three, and four-roomed tenements, which are let, including a free supply of gas, and the use of a scullery in common to two families, at the following average rentals, viz. :—

|                 |                                  |
|-----------------|----------------------------------|
| Two rooms . . . | 3 <i>s.</i> 6 <i>d.</i> per week |
| Three " . . .   | 4 <i>s.</i> 6 <i>d.</i> "        |
| Four " . . .    | 5 <i>s.</i> 6 <i>d.</i> "        |

The rooms, however, are small, the living rooms being only 12 feet 8 inches by 9 feet 6 inches, and the bedrooms 13 feet by 8 feet, and 13 feet by 6 feet 4 inches. During the fifteen years the houses have been occupied the returns have averaged 4*l.* 5*s.* 5*d.* per cent.; but for the year ended August 1884 the net receipts were only 643*l.*—equal to 3*l.* 11*s.* 8*d.* per cent. on the outlay. In addition to the above, the Corpora-

tion are now erecting thirteen blocks of dwellings, containing 272 tenements and twelve shops, on a portion of the "Nash Grove" area, which was cleared by them under the Artisans' Dwellings Act of 1875. The area comprised 22,400 square yards of land, and the total cost of acquiring the whole of the interests was 67,000*l.* The Corporation have allocated 9,000 yards for the purpose of erecting these dwellings, and the buildings themselves will occupy 3,200 yards, the remaining 5,800 yards forming a recreation ground at the rear of the blocks. The houses will be five storeys high, and will form a quadrangle, with frontages to four streets, one of the street frontages being utilised for the twelve shops. There will be two three-roomed and two two-roomed tenements, approached by a separate staircase, on the four lower floors of each of the several blocks, with a laundry, two sculleries, and two water-closets for the use of the four families, while the upper floors will be divided principally into single-room tenements. The single rooms are 13 feet by 19 feet, with a recess for a bed; the two-roomed tenements comprise a living-room 13 feet 1 inch by 12 feet 4 inches, and a bedroom 13 feet 3 inches by 9 feet 7 inches; and the three-roomed tenements have an additional bedroom 13 feet 1 inch by 8 feet 6 inches. The 272 dwellings are estimated to cost 55,000*l.*, exclusive of the land, and it is anticipated that the net return on this outlay will be at the rate of five per cent. per annum. The rentals are fixed as follows :—

|                   |                                   |
|-------------------|-----------------------------------|
| One room . . .    | 2 <i>s.</i> 9 <i>d.</i> per week. |
| Two rooms . . .   | 4 <i>s.</i> 3 <i>d.</i> "         |
| Three rooms . . . | 5 <i>s.</i> 3 <i>d.</i> "         |

In Ashfield Street, Liverpool, a company promoted by some of the leading inhabitants of the town has erected a block of 150 tenements, somewhat similar to the St. Martin's cottages, at a cost of 22,000*l.*, or an average of 51*l.* per room. The rents were slightly higher than at St. Martin's, but, as the company had several unoccupied dwellings, a reduction has been made, and the houses are now more fully occupied in consequence. The company has made an average profit of a little over four per cent.



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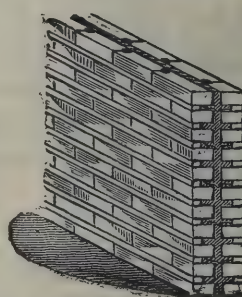
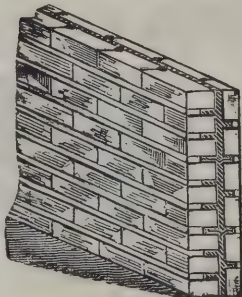
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for the ten years previous to 1883, the lowest dividend being three and a half per cent., declared in that year.

In London an immense number of dwellings had been built in the last twenty years mainly by the Trustees of the Peabody Donation Fund, the Improved Industrial Dwellings Company, and the Metropolitan Association for Improving the Dwellings of the Industrious Classes. The capital expended by these three Associations alone amounts to 2,312,000*l.*, and the number of persons housed by them is nearly 50,000. The Trustees of the Peabody fund have expended, up to December 31 last, the sum of 1,170,787*l.* on the purchase of sites and the erection of model dwellings in different parts of the metropolis.

Seventeen groups of buildings were completed at the end of last year, accommodation being provided for 4,550 families or 18,450 persons, the number of separate rooms being 10,144. The sites covered were purchased, in six instances, from the Metropolitan Board of Works at a cost of about 5*s.* per square foot, the land having been acquired by the Board of Works under the Artisans' Dwellings Act at a cost of about 21*s.* 6*d.* per square foot. The loss to the Metropolitan Board of Works on these six sites amounted to about 600,000*l.*, which is, in effect, a contribution of that sum by the ratepayers towards the erection of artisans' dwellings. The gross receipts from rents in 1884 were 55,486*l.* The payments for rates, water, repairs, superintendence, &c., amounted to 15,769*l.*, the expenses of management were about 1,155*l.*, and the interest on loans absorbed 11,106*l.*, leaving a net profit of 27,456*l.*

The rents charged are as follows:—

|                  |  |
|------------------|--|
| For 1 room . . . | 2 <i>s.</i> to 3 <i>s.</i> 6 <i>d.</i> |
| „ 2 rooms . . .  | 3 <i>s.</i> to 5 <i>s.</i> 6 <i>d.</i> |
| „ 3 „ . . .      | 4 <i>s.</i> to 7 <i>s.</i> 3 <i>d.</i> |
| „ 4 „ . . .      | 7 <i>s.</i> to 7 <i>s.</i> 6 <i>d.</i> |

The average rent of each room being 2*s.* 1½*d.*, and of each dwelling, 4*s.* 8¾*d.* These charges in all cases include the free use of the wash-houses, baths, &c. The rents in the Peabody Buildings appear to be fixed on a lower scale

than those charged by other associations providing similar accommodation, the object of the Trustees being to limit their profit to 3 per cent. The whole of the buildings are arranged on much the same plan, a laundry, with two water-closets, being provided on each floor for the use of ten rooms, which are occupied as a rule by four families. The average cost of the buildings, including the laundries, baths, &c., is estimated at 75*l.* per room. The authorities of the City of London are also engaged in erecting at a cost of nearly 70,000*l.*, five large blocks, capable of housing 1,000 people, on land in Petticoat Square.

#### EMPLOYERS' LIABILITY ACT.

At the Leeds County Court, before Judge Greenhow, actions were brought by Dennis Foley and Daniel Conolly, bricklayers' labourers, to recover the sum of 80*l.* each from Edward Oakes, builder and contractor, Hunslet, for injuries sustained by them on January 24. The case of Foley was first proceeded with. Mr. Dunn appeared for the plaintiff, and Mr. E. Tindal Atkinson, barrister, represented the defendant. From the statement of the plaintiff it appeared that he was employed, with others, at Messrs. Kitson's premises, where the defendant was carrying out some structural alterations, the work being under the superintendence of Samuel Hirst, his foreman. A girder was being lowered from an upper storey of the building, when it broke away and came crashing through several floors, carrying brickwork and debris with it. Hirst told the men that the rubbish must be got out within a few hours, and ordered them to do the work. The plaintiff pointed out that a quantity of bricks were hanging, almost ready to fall, from above, and said no one should be called upon to work underneath until they had been knocked away. Hirst, however, said "there was no time for knocking down, and if he didn't want to work, he could go home." Considering that that would mean his discharge, the plaintiff went to work with others, but

bricks fell from time to time. He was struck on the head, rendered unconscious, and remembered nothing more until he found himself in the General Infirmary. He remained there for three weeks, and was an out-patient for three months and two weeks. He could no longer ascend ladders with loads upon his head, and had only earned 35*s.* since the accident happened. At the time of the accident he was earning 1*l.* 0*s.* 10*d.* a week. In cross-examination, the plaintiff stated that he had had three different masters since the accident occurred, but simply because he could not carry things on his head they had discharged him. There was a way of getting to the rubbish that was to be removed without the men having to come under the overhanging bricks. That was the safest but not the quickest way. Hirst told them repeatedly not to go under the place where the materials were hanging, but he sent them to another portion still more dangerous. For the defence Mr. Atkinson said his case was a flat denial of the main issues upon which the two plaintiffs relied for the purpose of recovering damages. These men insisted upon doing that which they were warned not to do. Hirst had told the plaintiffs to cease work altogether, and to go away from the place where the hole was until he had found a chain and properly secured the girder. In his absence the plaintiffs went on with the work. The storekeeper could not be found, and Hirst went away a second time to try to get a chain; and it was during his absence that the accident happened. The learned counsel's statement was corroborated by Hirst and several of the men who were engaged at the same work as the plaintiffs. His Honour said he did not believe that Hirst gave orders to clear out, but that he only gave orders to remove to the other side of the heap. Having set these men, against their will, to do a most dangerous job, he ought to have remained to see that they obeyed his orders. His Honour gave a verdict for the plaintiff for 40*l.*, and said that if the parties were willing he would give the same decision in the case of Conolly. This was agreed to, and a verdict was also entered for the plaintiff Conolly for 40*l.*

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# The Architect.

## THE WEEK.

M. BOUGUEREAU, having had seventy-two votes, has at length obtained the Médaille d'honneur of the Salon. It is only fair that the President of the Society of Artists should have his turn, and last year he nearly gained the medal by the *Bacchus* which was afterwards exhibited in Bond Street. M. BENJAMIN-CONSTANT stood second in the voting with sixty-three votes, and M. HUMBERT third with forty-nine votes. Last year there was no award of the Médaille d'honneur; this year no picture has been considered worthy of a first-class medal. Second-class medals have been voted to MM. FRIANT, WEISZ, MATHEY, BRAMTOT, PRINCETEAU, DARVAUT, FOUBERT, A. EDOUARD, LEWE-MARCHAND, BERTEAUX, PETIT-JEAN, CLAIRIN, HAREUX, and LAGARDE. A sufficient number of votes was not secured by any artist to gain the Médaille d'honneur in sculpture, but M. MERCIÉ stood highest. MM. DAILLION, DESCA, CROISY, CARLÈS, and ROTY obtain first-class medals.

THE Medal of Honour for architecture in the Paris Salon has been awarded to M. FRÉDÉRIC LALOUX. It is not for a work that is to be carried out, but for a restoration on paper of an Olympian temple. First-class medals have been obtained by M. LEFORT (*Palais de Justice, Rouen*), M. QUATESOUS (*Design for a Salle des Séances Publique*), M. BOILEAU fils (adopted design for the GAMBETTA Memorial), and M. DARCY (*Restoration of the Château de Mehun sur Yèvre*). It will be seen that out of the five principal medals only two are gained by designs which are likely to find their way to contractors. The four second-class medals have been awarded to MM. HENRI PONS (*Restoration of la Ville et Château de Najac*), V. CUVILLIER (*Farm Buildings*), C. WABLE (*Decoration of a Chapel*), and E. CAMUT (*Palais de Justice, Meaux*). The winners of third-class medals are MM. NODÉT (*Château de Najac*), BACS (*Hall in the Palais de Justice, Brussels*), CHAÎNE (*Château du Grand Pressigny*), and PONCET (*Design for a Ceramic Museum*). Honourable mention has been made of the works of MM. P. BOUSSAC, P. BERNARD, L. CADDAN, H. DEGEORGE, H. DESPIEU, V. HOURLIER, E. LACOMBE, G. LECHATELIER, G. LEROY, CH. NORMAND, P. RAFFET, and P. RENAUD.

THE annual meeting of the Old Mortality Society was held, by permission of the Dean of WESTMINSTER, in the Jerusalem Chamber on Wednesday. The society now numbers about 670 members, and its income is about 400*l*. The greater part of this sum has been expended in the work of visiting, inspecting, and reporting on the condition of tombs in remote country churches, and in assisting the incumbents to conserve them. Among the churches thus benefited are Sprowston, Norfolk; Aldham, Essex; Lusk, county Dublin; Appleby, Westmoreland; and Westminster Abbey.

UNANIMITY evidently prevails among the members of the Architectural Association, in regard to the adoption of measures to increase the efficacy of the Association as an educational organisation. This was sufficiently shown by the proceedings which took place at the special meeting held on Friday evening in last week, when a comprehensive scheme, formulated after much consideration by the Committee, was adopted, with unimportant amendments. Many details in first working the scheme will no doubt crop up, and will either naturally arrange themselves or have to be dealt with when the new conditions come into practice. But to turn from details, the putting of the scheme in work will necessitate an increase in the funds. It was therefore proposed to raise the annual subscription, heretofore half a guinea, to one guinea. This proposition was the first hitch in the proceedings, and the meeting adjourned without coming to a decision in the matter. Many of the members saw grave objections to the proposed change, and considering the objections that would certainly attend it, and the doubtful advantages that would result, it is not unlikely that the Council will see their way

to providing the extra funds that may be required in some other way. If we add that no serious difficulty need stand in the way, we merely express an opinion that is held by one whose judgment carries the seal of twenty years' experience as hon. treasurer to the Association, Mr. J. D. MATHEWS. At any rate, after all other means have been tried and have failed, the experiment of raising the subscription could be made.

ENGLISH visitors to Paris during summer and autumn will find an advantage in visiting the Institut Polyglotte in the Rue Grange-Batelière, of which the honorary director, M. LEMERCIER DE JAUVELLE, holds an important public office. It gives, as the name implies, opportunities for learning and conversing in most of the European languages, and it has the support of the Minister of Public Instruction and Fine Arts, the Minister of Posts and Telegraphs, and the Municipal Council. Conferences are held every week, and among the subjects of those in English were "GEORGE ELIOT," "English Sports and Pastimes," and "CHARLOTTE BRONTË."

A RETURN has been made of the value of the works of art belonging to the City of Paris, and it is found that the total reaches 12,256,660 frs. Of that amount about four millions represent the works in civil buildings, and eight millions those in the churches. Thus the church of St.-Eustache is put down as possessing works to the value of 700,000 frs., and St.-Germain-des-Prés 642,000 frs. The sculpture in the new Hôtel de Ville is worth 1,384,000 frs., while the statues in public places are alone valued at nearly a million. The fine monument in the Place de la République is entered at 300,000 frs. The collection of plans of Paris is supposed to be worth 1,714,000 frs., and the library and Musée Carnavalet 1,200,000 frs., and the tapestries 2,250,067 frs.

A PARAGRAPH quoted from the *Athenæum* has been going the round of the daily newspapers with an account of the injurious effects suffered by the Ansidei RAPHAEL since it was placed in the "dissipated atmosphere" of the National Gallery. Sir FREDERICK BURTON, the Director of the National Gallery, has, however, written to correct this and other mistaken statements in the paragraph, the fact being that the blemishes in the painting are visible under the present strong light, which in the gloom of the Blenheim Gallery were not remarked. The picture itself is precisely in the same condition it was previous to its removal to London.

THERE is no telling what may not happen when the turning of a penny is in view. The latest exploit of misdirected ingenuity is the manufacture of letters by Mr. RUSKIN. At any rate, the solicitors of Mr. RUSKIN have taken steps to warn the public against buying letters purporting to have been written and signed by Professor RUSKIN, as they have been led to the discovery of a manufactory of such letters, and have succeeded in tracing and withdrawing from circulation more than 280 of them. Eighty more are said to be still in the market.

THE flimsy character of the stalls and drapery around the high altar in the church of Ste.-Geneviève might be taken as evidence of the uncertainty of the tenure of the clergy. At a distance the carving and curtains appeared to be real, but they were only scene-painter's work, and could always be cleared away at a few hours' notice. For the same reason, the church contained few statues or pictures, and the congregation was always scanty. There is, accordingly, not much inconvenience through the secularising of the building. It had a hybrid character, and was as much a great hall as a church. But the facility with which the transformation was made has not given general satisfaction. The next question that will have to be considered is the fate of the wall paintings. They are essentially ecclesiastical in character, some relating to Ste.-GENEVIÈVE, some to St.-LOUIS, and commissions have been given for others depicting a similar class of subjects. So long as the building was used as a church they were apposite, but since it has become once more a Panthéon they are certainly out of place. They will probably be removed, and a different class of paintings must then be substituted.



## THE PARIS SALON.

THERE is always an absurdity about every attempt to express the character of an exhibition of paintings in one word. And yet the first question that is generally asked of a visitor to the Royal Academy or the Salon is, whether the collection is good or bad? If we were to be guided by the general opinion of the Paris journals on this year's exhibition in the Palais des Champs Elysées, there would seem to be no doubt about the quality of the work. M. ALBERT WOLFF began by saying that a visit to the Salon nowadays reminds him of the story of the Sleeping Beauty in the Wood: everything corresponds with what was seen in the year before. A host of writers have taken the cue from the critic, and when the French visitor pays his franc and passes through the turnstiles into the building, he is certain to be biassed against the pictures and statuary. It is possible that the writers in the Paris newspapers are not entirely impartial. There are many struggles taking place in the city, and apparently the journalists and the Society of French Artists are testing their relative strength. The artists have been allowed to arrange exhibitions without much official interference. So vast and exceptional a concession has persuaded them that they are omnipotent, and the power of the press is undervalued. But in France a good many governments have fallen because they could not resist the journals, and unhappily the artists are also made to feel what the pen can do. The authorities of the Society continue to meet, organise, report, and proclaim the satisfactory state of the finances which are derived from exhibitions, but never before were so many pictures remaining unsold in studios and dealers' shops. A Frenchman does not care to buy a work which has been made the subject of a delightfully malicious epigram; although, personally, he may admire it. He has to remember that his friends would be always recalling the capital things that were said about it by such-and-such a writer. He, therefore, prefers to wait, or he turns to the Hôtel Drouot, where remarkably good prices are now obtained, owing to the demand for works which have not been recently criticised.

The exhibition this year we consider to be rather above the average, although it has the drawback of many absentees whose works are always attractive. For the English visitor it has the merit of presenting fewer unnecessary nudities than usual. Much can be said in support of the dictum of INGRES, "l'Art c'est le nu," but all artists do not treat the nude in the spirit of the leader of the Classicists, and of late years paintings have been seen in Paris which were an outrage to good taste. The action of the Government, which has led to the rejection of a few works, has apparently exercised a salutary effect, and painters must feel that notoriety for a debased class of work does not pay in the long run. In spite of the interest offered by the new edition of FLAUBERT'S novels, there are, we believe, not more than two "Salambôs" among the paintings.

It would be impracticable for us to notice even one-hundredth of the pictures. All we propose to do is to select a few works which may serve to indicate the tendencies of French art at the present time. What strikes us is the general air of uncertainty about the collection. Since commissions are scarce, it is natural that artists should try and discover what patrons want, and accordingly many adopt a new line, giving proof of their versatility. There seems to be more portraits than formerly; there is an abundance of landscapes, and a vast quantity of scenes from everyday life. Several artists have had the courage to go to the Bible for subjects. We noticed more than one version of the parable of the Good Samaritan and of the story of HAGAR and ISHMAEL. M. HECTOR LEROUX, whose illustrations of ancient Roman life are always fascinating, has this year painted a small but pathetic figure of the daughter of JEPHTHAH lamenting in the mountains. M. OLIVIER MERSON has illustrated a Christmas carol, of which the subject is the arrival of the Virgin MARY and Saint JOSEPH at Bethlehem, where they seek vainly for a refuge. There is a tender grace about the work that is very rare in modern French painting. A few artists will generally be found near it who are loud in its praise, and we are surprised it has not been premeditated by the jury. M. MICHELIN, in his *Repast at Emmaus*, has attempted the very difficult task of creating a new ideal of CHRIST. It is far from resembling

the Mediæval and Italian types, and is more suggestive of a humble enthusiast in whom emotion is paramount; but there can be no question of the sincerity and skill with which the figure is worked out, or of the painter's reverence. Another remarkable version of a Scripture theme is M. PILLIER'S picture, where CHRIST is seen in a humble schoolroom in Paris surrounded by poor children, while their parents look on amazed at a distance. M. THIRION shows MOSES exposed on the Nile, and the grief of the mother as the basket of bullrushes floats away from her on the broad water. It also is novel and impressive. M. DAGNAN-BOUVERET in *La Vierge* shows the carpenter's workshop, and here again we see a worthy interpretation of the theme.

The commissions for pictures for public buildings, such as municipal buildings, museums, and churches, give artists opportunities for representing the figure on the largest scale. This year there are several works which, if seen in Burlington House, would be called colossal. One which has apparently obtained the Médaille d'honneur for its author is M. BOUGUEREAU'S diptych *The Adoration of the Magi* and *The Adoration of the Shepherds*, which is intended for the Church of St. Vincent de Paul. It shows the marvellous workmanship of the author. M. BOUGUEREAU paints Scripture pieces or pagan legends, goddesses or madonnas, saints or peasant children with equal facility. Every work is marked by brilliancy, the contours are almost faultless, and yet somehow one is rarely satisfied with the painter. He is so able that more is expected from him. It is difficult to resist the thought that M. BOUGUEREAU is unmoved by his own work, like GUIDO; his facility in producing beautiful forms is almost a dangerous gift, for apparently one class of work is the same to him as another. But it may be safely assumed that M. BOUGUEREAU could not be tempted by a commission for such a painting as M. BONNAT'S *Martyrdom of St. Denis*, which is intended for the Panthéon. The legend of the first bishop of Paris, who took up his head and carried it off after decapitation, hardly seems adapted for painting; but the experiment has to be often made in France. In the Church of La Trinité there is a painting by M. LANGEÉ, if we remember rightly, where the saint is seen clad in his episcopal robes, and carries the head which bears the mitre in his two hands against his breast. But in addition there is an indication of the head in its proper place, which suggests the dotted lines on a plan to express some former part of a building. The arrangement is evidence of the difficulty of the task. M. BONNAT evades it by representing St. DENIS just risen from the block at Montmartre, and stooping to pick up his own head, while the spectators look on with amazement. There is realism enough about the scene, which gives scope for that display of blood in which so many artists have taken delight since it brought fame to poor HENRI REGNAULT. The figures are vigorously painted, and of course there is the skill in expression which belongs to so eminent a portrait painter. But the hatching which is employed to express the muscles diminishes the general effect, while the subject can never be pleasing, even in a building like the Panthéon, where so many legends are represented.

The painting by M. BENJAMIN-CONSTANT, *La Justice du Chérif*, is larger than any work from his hand which we have seen lately. This painter has made the Moors his special study, and has read the old legends with the light derived from travel in the East. The subject of the picture is the vengeance as much as the justice of a prince who has had the women of his harem executed in a chamber that is suggestive of Oriental luxury in its most expensive form. The air of the room is filled with the smoke of incense, the fountain throws up a delicate jet of water, the couches are emblazoned with embroidery, and all this glory enhances the gloom of the scene, for it contrasts with the slain favourites who still wear the richest gems on their necks and fingers. If we might venture to suggest a defect in so splendid a specimen, it is the figures of the two executioners who are squatted near the victims. They are, we think, unnecessary, and their absence would have made the scene more tragic. Another, and a much larger Moorish scene, is M. CLAIRIN'S *After the Victory*. One is an interior, and sombre; the other an exterior, and almost dazzling in light. We see the outside of the Alhambra, and in one of



the gates is the king on his horse. Around are chiefs, who look to him with enthusiasm, and are proud to lay the fruits of their victory at his feet. Along the walls are negroes, who hold banners. In the foreground on one side are the bodies of Christian soldiers, old and young, and on the other are the captive women. A colossal Moor holds a fainting girl in his arms as if she were a baby, while her mother or sister raises herself with difficulty for a final appeal. It is a pageant, and the suffering of the Christians counts for little. Very different is the big picture by M. ROLL, which, as is usual with this artist's works, occupies one of the most important positions in the whole exhibition. It is called *Le Travail*, and represents a building work at Suresne. The figures are larger than life. As M. ROLL never extenuates any defects in the forms of his countrymen, the stone-cutters and labourers are not handsome, and have the look of men who use certain muscles more than others. The atmosphere seems to be filled with stone-dust, and altogether labour appears to be much less attractive here than in the picture which Mr. MADOX BROWN painted of an excavation in a London street, with CARLYLE and MAURICE looking on; or in the picture of the Portland Quarries, by Mr. WELLS, which is in the Royal Academy. But the endeavour to be truthful, regardless of conventions, gives importance to the painting, and it is not surprising that it obtained so many votes in the contest for the medal.

If M. ROLL represents the most advanced realism, we see a no less notable example of idealism in M. FRITEL'S *Solum Patrie*. It is one of the numerous appeals to patriotism in the exhibition. Night has fallen, and a body of ghostly warriors, from ROLAND to the first NAPOLEON, are seen passing over a French field. They are the spirits of the men who were defenders of the country in many ages, and they come with the sad conviction that they cannot die again for it. The power of the work is manifest, but either poetic imagination does not correspond with modern notions, or it was considered impolitic to approve of the subject, for M. FRITEL received but two votes in the competition for the medal of honour. M. MAILLART has sent one of the series of historic pictures which he has in hand for the town of Beauvais. It also is patriotic in spirit, and suggests that a man cannot die better than when facing fearful odds, for the ashes of his fathers and the temples of his deities. The subject is taken from the "Commentaries" of CÆSAR, and represents the death of the Gallic chief CORREUS. He is the last of his tribe, and stands on the field amidst a heap of slain, attended by his faithful dog. Around are the Roman archers, and beyond is the leader with a large army. Life is only a question of a moment, and the moral victory is with the man who looks down on the host that will not venture within arm's length of him. It is an old version of a truth which France has been taught, that superior weapons must win the day against courage. The town of Châteaudun took an honourable part in the last war, which has been symbolised in the admirable work by M. LECHEVALIER CHEVIGNARD, which is intended for the local hôtel de ville. Here we see warriors of various times, whose names are associated with the place, and who recognise the merit of the latest evidence of courageous defence.

The works of M. PUVIS DE CHAVANNES are always of great importance to every one who studies decorative art, although justice can never be done to his works in the Salon, inasmuch as the scheme of colouring is determined by the position which the painting has eventually to hold. This year we have only a small cabinet picture by the artist, *Autumn*, which is another version of a work in Lyons. The subject is simple, and shows two nude girls gathering fruit, while a woman looks on. The beauty of line is undoubted, and the picture attracts in spite of the flatness of treatment, which is unusual in works of the size. As M. HENNER lives in an adjoining appartement to M. PUVIS DE CHAVANNES, the work of one artist suggests the other's. Their styles are alike and yet unlike in many respects. Both are remarkable for the simplicity of their scheme of colour, but M. HENNER always avoids large canvases. Objection has been raised against the similarity in his pictures, and we might apply what Dr. JOHNSON said of green fields, and say, "When you have seen one picture by M. HENNER you have seen all." But it deserves to be remembered that the slightest change in the pose of a

figure makes subtle differences in all the parts, and they are realised by M. HENNER, and almost by him alone. His *Magdalen* may have resemblance to others of his kneeling figures, but it could not be passed over in the largest gallery of the Salon. Yet apparently nothing can be simpler. The flesh is like ivory in colour, the hair is golden, and the robe is deep black. The background is so slightly painted that we can see the grain of the panel. The girl's face is concealed by her hands, but the figure fascinates. In his *Fabiola* we have a head of a girl in profile wearing a black veil. Mr. WHISTLER knows what use can be made of black, but he does not observe the law *rien de trop* so well as M. HENNER, whose works, apparently simple, are inimitable. M. HENNER, perhaps, has hitherto made the nearest approach, but this year he has done more justice to his own originality, and his *Nymphes* is an admirable specimen of flesh-painting.

The landscapes, as we have said, are numerous; mountain scenery alone has failed to afford subjects to the French artists. In sea pieces they are becoming most effective. Such a picture as M. BERTHELEMY'S *Coup de Vent-débout* expresses wave-force in a manner that would have pleased TURNER or STANFIELD. Two remarkable landscapes which have come from the north of Europe should not be passed over in the shortest notice. One is M. SINDING'S *Laplanders Saluting the Sun after the Winter*, which might be labelled as the representation of a scene in prehistoric times, owing to the strange forms of the people, who are gazing across the desolate country. The second is also by a Norwegian artist, M. NORMANN, and gives a view of one of the fiords in a masterly style. The detail of the rocks is shown with a distinctness that seems almost photographic, but there is no loss of breadth in the treatment.

There are a few pictures taken from English history which merit attention. One is M. MAIGNAN'S sombre but able work representing the body of WILLIAM THE CONQUEROR lying naked on the ground, after the attendants had pillaged everything that was left near the corpse. A second is M. PESNELLE'S *Murder of the Princes in the Tower*, which is as excellent in drawing as in colour; and a third is the brilliantly painted figure of ELIZABETH at Woodstock, by M. A. BARZAGHI-CATTANEO. But in recent exhibitions in Paris history pieces are at a discount. M. BRUNET depicts the deliverance of Poitiers from the English. M. LOUIS BEROU has a large work in three panels, representing HENRY III. at Venice, for which inspiration has evidently been taken from the works of VERONESE. It gives good promise for the young artist's future. From what we have said it will, we trust, be evident that the visitor need not anticipate, in spite of the newspapers, that there is any diminution of interest in this year's Salon.

## NOTES ON SOME PROVINCIAL CHURCHES.

[BY A CORRESPONDENT.]

AN architect with a fairly wide country practice has many opportunities in the spare hours which he must necessarily have, while going from one place to another, of examining various buildings. I therefore think that a *resumé* of some of these experiences of ecclesiastical architecture may not prove uninteresting, or, I venture to hope, unprofitable to the readers of *The Architect*. If I occasionally somewhat enlarge on what I take as my "text," it is because I see a favourable opportunity of expressing views by no means foreign to the point at issue.

The parish church of Frome, though it has been practically almost rebuilt, is yet very interesting, owing to several remarkable features. Its situation, on a hill, is picturesque, and has lent itself under skilful hands to the best use. I think there could not be a better beginning of the approach to the church than the fountain, with its clear rill of sparkling water, a sight which moreover suggests symbolic references. The fountain is fortunately not like a mere squirt, but is an arched recess in the retaining wall of the path. Why cannot such a charming treatment as this be adopted in other instances where a hillside gives the opportunity, as, for example, at a church like St. Mary's, Whitby? The winding of the path and steps up to the porch was cleverly arranged by the late Mr. GILES, the well-



known architect. Observe how, in one sculptured scene, half of the subject is on one side of an inner angle, the remainder on the other side.

Entering the church, the systematic manner in which the designs of the painted glass windows are arranged is much to be commended. The patron saint being St. JOHN BAPTIST, his life is depicted, each window having under it a brass tablet recording the cause of its erection. The Chapel of St. Nicholas is now used as a baptistery, the screen appropriately representing water-lilies and fish. The pavement, where most distant from the font, is composed of various inlaid coloured marbles, and exhibits the Seven Deadly Sins, while nearer the font are represented the Seven Virtues. The panelling of the wall, we are told, represents the net which the fishers—*i.e.* Apostles—were to throw into the sea and catch of the fish both good and bad. I cannot help considering the water-lilies and fish as well as the net as rather far-fetched symbolism to represent decoratively—in fact, a little childish for our modern ideas, and giving occasion for ridicule on a solemn subject. The same kind of symbolism occurs in the west apsidal baptistery of St. Barnabas, Oxford. The window to the baptistery at Frome is a representation combining a memorial of St. NICHOLAS and the apostolic commission of baptism. After figures of the Apostles, St. NICHOLAS, as Bishop of Myra, in his cope, and with mitre and crozier, is shown as a kneeling figure receiving by succession the apostolic commission. Over the chancel arch is represented the Adoration of the Lamb, before whom the angels and the saints are casting down their crowns. The sculptured stone medallions on the north side of the nave contain the Miracles of our LORD, the south side the Parables, and constitute a very interesting series. At the Church of St. Mary Magdalene, Paddington, a similar treatment has been adopted with good effect. The pulpit is surrounded by sculptures of eight of the principal preachers of the world:—NOAH, MOSES, ELIJAH, St. JOHN BAPTIST, St. PETER, St. PAUL, St. CHRYSOSTOM, and St. AMBROSE. Turning to the reredos, the history there represented is carried on in point of time by the painted glass window above.

In the fine church of All Saints, Clifton, the architect did not forget that churches are made for use—*i.e.* for worshippers—and, instead of allowing the west entrance to be cold and draughty, as is too often the case, he provided a large internal oak lobby of appropriate design. On weekdays about half the western area of the nave is cleared of chairs, which are all piled up one side, as likewise the kneeling cushions. For the greater facility of shifting about the latter there is a Gothic wheelbarrow. The appearance of the large unencumbered area near the principal entrance is pleasing. The font is rightly dignified by being raised on a large square platform, the tile pavement around it being richer in design than in the rest of the nave. The effect of the colouring on the deal boarding to the nave roof, without staining or varnishing, leaving the natural surface, is good; but the same cannot be said—at any rate, by most people—of the colouring to the sculpture of the splendid reredos. The propriety of tinting sculpture is too much of a vexed question to enlarge upon here, and would require an article by itself. The subjects of all the painted glass windows have been mapped out, so that the whole forms one continuous well-considered scheme. One of the notable features in this striking church is the noble chancel screen, which could not escape the observation, or, it is to be hoped, the admiration of the most casual spectator. In Mediæval times in England, as far as I am aware, there are no examples of metal rood screens, though they are to be found on the Continent. Examples of wrought-iron grilles to chantry chapels are not infrequent. The use of iron and brass for this purpose is one of those bold departures from ancient English precedent for which we have to thank some of those great pioneers of the revived Mediæval styles. The material has its advantages in the capacity of being made rich and yet light, so no one can say that view or sound is obstructed, though some may declare that the clergy and choir look as if enclosed in a bird-cage. It is very easy to raise a senseless laugh. Modern wood rood screens can have the mullions and openings of greater width than old examples, and the tracery above the sight line as rich as may be desired. Yet the effect cannot be so good, or furnish the interior of a church so well, as the more

frequent mullions and narrow panels. At All Saints, as has been implied, the chancel screen is composed of brass and wrought iron, the gates having closer and more elaborate work than the sides, which are more open. Much is often said in our times as to the appropriate treatment of wood, stone, and metal respectively. Do we, as a general rule, see this in Mediæval work of the best periods? For example: in the beautiful old altar screens the stonework is fully as delicately moulded and carved—in fact, marvellously so, as if it was of metal or wood. I do not say this is a reason why we should not act up to the common sense principles we have formulated; but I think it is a reason why our hobby-horse should not be ridden too hard.

The chapel at Eton College is an example which, externally, in its height and general scale, looks Continental, though internally it is quite English in type. Its grandly-proportioned and rich windows, of the best period of the Perpendicular style, have also excellent tracery and mouldings. They fill up nearly the whole space between the buttresses, some of the outer mouldings stopping against them, which is also more of a foreign than an English feature. The same remark applies to the great height from the floor at which the windows are placed, which leaves such a large unbroken space of wall beneath them. The buttresses are a striking feature in this chapel, being unusually large and bold.

How are return-stalls to be rendered applicable to English churches at the present day? The question was drawn forth by the examination of St. Clement's Church, Bournemouth, for which the architect has recently designed a fine reredos. Without commenting on any other details of this building, I give the note I made immediately after my examination of the structure. "One of the best things in this church is the arrangement of the return-stalls, placed at an angle of forty-five degrees, instead of with their backs to the congregation." In my MS. relating to this subject, a page or two further on, this passage occurs about the interesting Mediæval church of Adisham, Kent:—"There are two return-stalls on the east side of the rood screen. Now, however virtually correct this may be, a not unnatural prejudice exists against seeing only the clergyman's back during nearly the whole service. Moreover, if he has a weak voice, it is almost impossible to hear him. In these times it seems to me we should only adopt those Mediæval customs that harmonise with the feelings of the present day, and not merely introduce practices because they are Mediæval or modern Roman." But when an architect is restoring an ancient church where the original "return"-stalls remain, however imperfect, he should certainly preserve the arrangement. It is not necessary to use them, and they do no harm, obstruct no view, and are always there to show their history. Continuing my notice of Adisham Church, I should remark that in the chancel a Mediæval tile pavement exists. The pattern is rather a large one for a small church, as it is formed of sixteen tiles, each about 4 inches square. Every tile is, however, complete in itself as regards its own device. Had the tiles been 6 inches square, the arrangement would certainly have been too large in scale except for a big church, and the discrimination of the designer is thus shown. Another feature in the same building worth commenting on is the arrangement of the organ, which, when I saw it some years since, stood in the chancel, the organ on one side, the keyboard on the other, the trackers being under the floor. The keyboard has the semblance of a large, high, and wide reading-desk ornamentally treated. There is plenty of space for the organist, though the necessary mechanism must have been rather costly. The church is of cruciform plan, but the architect has done wisely in not placing the organ in one of the transepts away from its work. Instead of a reredos is a triptych, a feature becoming not so uncommon in the present day.

I have before this commented in these pages on the charming new parish church of Bettws-y-coed. So I would now confine myself to remarking on the effective manner in which the tile pavement to the chancel is treated. There is nothing "fussy" about it, nothing but what is appropriate to a village church. The idea intended to be suggested is evidently that of a processional path, like a broad piece of carpet leading quite up to the altar; the pattern is confined



to this part, the sides being quite plain. It is best in such cases to have plenty of red tiles, a very safe colour when employed in any quantity, as it never seems to unduly predominate or attract too much attention. With a few patterns here and there it is quite ornamental enough for the normal rural church. A good modern book of suggested arrangements of tiles, originated by some able architect, is a desideratum. Some of those in MAW's pattern-book, designed by eminent architects, are good; but many aim too high, and have too much variety of pattern and colour for ordinary use. In the Mediæval marble *opus Alexandrinum* pavements of Italy the tints are less crude, and there is an absence of the objectionable chess-board appearance so often observable in tile arrangements.

At Warmington Church, Northamptonshire, which has been well illustrated by Mr. WM. CAVELER, 1850, it should be observed in what a charming manner the plan of the jambs to the south aisle windows is changed at the springing line of the arches by the miniature capitals to the shafts. One cannot judge of the effect of such little refinements of architecture by drawings—one must see them. In a church of larger scale, and with larger windows, a loss of dignity might have arisen through such features. The eye seems then to require a more stately treatment. What is to be commended, and perhaps called picturesque in a small building, may become the reverse in a larger one, when a certain amount of repetition is necessary to avoid a bizarre appearance. It may seem a paradox, but the larger the structure, the less variety ought there to be proportionately in the detail, by which means greater dignity and stateliness is obtained. As a question of restoring an old parish church for the uses of the present day, I cannot but consider that Sir GILBERT SCOTT made a mistake in imitating the interesting Mediæval but very uncomfortable, low, and straight-backed benches at Warmington Church. Only a very few of them remained. It therefore seems a pity that, when entirely reseating a church, he reproduced the old ones, disregarding modern and altered requirements. The lower panels of the rood screen contain specimens of the ancient colouring. When those singing in the choir sit down these panels are so high as to entirely hide them. Here is, indeed, a conflict between archæology and modern ritual, and it is difficult to know how to act for the best in such cases, for in many old churches the unpierced lower portion of the rood screen is very high.

## THE ARCHITECTURAL ASSOCIATION.

A SPECIAL business meeting was held on Friday evening the 29th ult., Mr. R. C. Pink, president, in the chair.

The following gentlemen were elected members:—Messrs. B. Pethick, P. J. Dawson, J. C. T. Murray, E. G. Braybrook, and E. C. Bateman.

A vote of thanks was awarded to Messrs. Manning & Baynes, engineers, and Mr. Gruning, architect, in connection with the visit to Tilbury Dock; also to Messrs. Perry for kindly providing luncheon.

The PRESIDENT said the next business was the consideration of a report of the Committee upon a scheme for amending and consolidating the work of the Association.

Mr. Gotch proposed the adoption of the report. This was seconded by Mr. Slater.

The clauses were then taken *seriatim*, and the report in its amended form passed as follows:—

1. That there shall be two defined divisions of study in the Architectural Association, to be called the "Elementary Division" and the "Advanced Division."

2. That a chart, as here given, be drawn up, explanatory of this principle for the use of students and others.

### CHART.

|   |  |  |
|---|--|--|
| Sec. I.—El. Class of Design<br>Sec. II.—<br>See pages | El. Class of Construction<br>See pages           | Lectures on History and Construction<br>See pages  |
| Class of Design<br>" Colour Decoration<br>See pages   | Class of Construction<br>Advanced "<br>See pages | Class for Quantity-Taking and Specification-Writing<br>Class for Land-Surveying<br>See pages |

3. That a committee of advice, whose names shall be published in the Brown Book, be appointed by the committee each session, whose duty it shall be to recommend to members

on application the particular course of study it would be advisable for them to pursue in the Architectural Association.

4. That a circular be published containing general suggestions, the chart, &c., for the guidance of students and others, and the same be also included in the information afforded by the Brown Book.

5. That there shall be a committee of visitors appointed each session to all the classes, to conduct the work of the same. The visitors to be *ex-officio* members of the committee of advice.

6. That the classes be arranged in the following order, viz.:—

7. Elementary Class of Design.—Section I. For study of ancient examples. Section II. For design based upon ancient examples.

8. Elementary Class of Construction.—The subjects to be treated in a more elementary manner than has hitherto been adopted, but on the same principle.

9. Lectures on the History of Architecture.—Lectures on Construction.—That the principle of *viva voce* questioning be adopted at the lectures, and the subjects treated of, to work in conjunction (as far as possible) with those set down in the classes.

10. Class of Design.—Conducted on the same lines as at present.

11. Class for the Study of Colour Decoration.—Conducted on the same lines as at present.

12. Class of Construction and Practice.—Conducted on the same lines as at present.

13. Advanced Class of Construction and Practice.—Conducted on the same lines as at present.

14. Class for the Study of Quantity-taking and Specification-writing.—That a new class be formed, and that planning, which has hitherto been taken conjointly with specification-writing, be now omitted from this class, and embraced in the work of the class of design.

14a. Surveying class to be conducted on the same lines as at present.

15. That members of the elementary classes be eligible to compete for prizes in their class during their first and second sessions only; but not after having attained the age of twenty-three years after the last meeting of the session.

16. That the rule as to members contributing to the work of the classes in future be strictly observed. That the amount of work in the various classes be reduced.

17. That in awarding marks in the classes of design, greater stress be laid in future on the quality of the draughtsmanship.

18. That the session shall commence on the first Friday in October and finish by the end of April or beginning of May.

19. [That country members be invited to send to the honorary secretaries their views (not later than May 20) stating how they consider the advantages of the Architectural Association may best be extended to them. All members are requested to express their views on this important subject.]

20. That the Essay Prize be of the value of 5*l.* 5*s.*, and be accompanied by the presentation of a silver medal; that the Architectural Association Design Prize be of the value of 10*l.* 10*s.*, and be accompanied by a silver medal.

21. That under necessary regulations arrangements be made for the inspection of buildings in progress by individual members during working hours, and also to practical workshops, and if means are forthcoming to provide technical and experimental instruction.

22. That after the year 1886 candidates for the Travelling Studentship be required to show that they have passed satisfactorily through one or more of the classes, except in the case of country members, which shall be referred over to the Committee. That the names of the holders of the Studentship be published in the Brown Book, and that the sketch of each student, which by the existing condition of the competition becomes the property of the Architectural Association, be framed with the name of the student and date of his year, and hung in the rooms of the Architectural Association.

23. That it is desirable that the library accommodation be extended and be opened to students two evenings in the week, and a general meeting-room be attached where the professional journals, &c., can be seen and tea and coffee obtained at a fixed tariff.

24. That the distribution of prizes and delivery of addresses be in future omitted at the *conversazione*.

25. That at the annual general meeting the prizes shall be distributed, the President shall deliver his address (as heretofore), and that short addresses be invited from the senior members of the profession.

26. That the following alterations be made in the Rules:—Rule 3, on sixth line, after "classes" to insert "and lectures."

Rule 38, on third line, after the words "shall be" to omit those to the end and substitute "placed at the disposal of the members, the prizes shall be distributed, the President shall deliver an address, and short addresses be also invited from senior members of the profession."



Rule 40, on second line, after the word "session" to omit the words to the end of Rule.

Rule 41, on second line, to substitute "May" for "June."

In discussing the subject most of the clauses were adopted without a dissentient opinion being expressed; in other cases the alterations involved no particulars of importance, whereas a brisk discussion took place on others. In regard of clause 5, Mr. J. D. Mathews regretted that there should be any idea of taking visitors from outside the Association, which had hitherto always been self-contained. He thought there were gentlemen in the Association sufficiently qualified for the purpose. Mr. Cole Adams remarked that it was proposed to have secretaries of the classes instead of presidents.

In regard of clause 14, it was pointed out by Mr. Cole A. Adams that the proposed establishment of this class had been received favourably, and he said that those who did not elect to take out their own quantities ought at any rate to know how to do so, and that by thus dissecting a building they got a proper grasp of the construction, such as they could not get in other ways. Lithographed sheets would be handed round and explained by the conductor of the class. Some members contended that this would interfere with properly learning specification writing, and that for architects precedence should be given to specification writing. On the other hand, it was urged that an architect learnt specification writing best by being taught to take out quantities. Mr. H. W. Pratt proposed, and Mr. Morgan seconded, as an amendment that in the title of the class "Specification Writing" should precede "Quantity Taking." This was lost on a show of hands and the clause adopted in its integrity. Clause 14A, omitted by inadvertence, was inserted.

Clause 15 originally ran, "That no member of the elementary classes be eligible to compete for prizes of his class after he has attended two sessions in that class." A discussion ensued in regard of the limit of age, as to whether it should be fixed at 23, 24, or 25 years of age, and by a large majority 23 years was fixed on.

A debate next took place on clause 16, as to enforcing the strict rule. Several amendments were put and lost. It was urged that the conductor of the class should have discretionary power; that members sometimes would, through no fault of their own, be excluded from the class. They might have been ill or detained in the office very late. The imposition of fines was proposed along with other suggestions, also by Mr. Slater, considering the difficulties that surrounded the matter, that the clause should be expunged. Statistics, however, were quoted to show that there were ample reasons why the attention of members should be called to the strict observance of the rule. In considering clause 20, Mr. Aston Webb pointed out that the A. A. design prize was *par excellence* the prize of the Association, but other prizes had gone over its head. He proposed that in value it should be raised to ten guineas, and accompanied by a silver medal. In opposition to this it was said that the worth of the prize was not in its money value but rather in *kudos*. A member added that he believed the rules conferred on the committee the power to arrange prize matters. The proposal of Mr. Webb was, however, put to the meeting, and very naturally was carried. An addendum was made to clause 22 in regard of country members. Amendments were proposed to clauses 24, 25, and 26, but lost, and eventually the main portion of the report, as amended, was adopted.

The printed circular containing the report went on to say that "the Committee have had under their consideration the report of the sub-committee appointed to consider the question of publishing the papers read at the general meetings, and they are of opinion that as this opens up the wide question of increased subscription from the members, that the decision as to its advisability should be left with the members themselves to decide," and members were required to state their views on the matter not later than May 20, so that a decision might be come to at the special meeting on May 29, when Mr. Cole A. Adams would move that in Rule 18 "17. 1s." should be substituted for "10s. 6d." with the object of affording means for increased educational advantages, &c.

Mr. COLE A. ADAMS made this motion. It was, he said, absolutely necessary to meet the new conditions of work, and was but a slight outlay for increased advantages which were requisite if they would keep touch with the times. In reply to the circulars sent out, only one in ten had been answered. Sixty answers more or less in favour had been received, and forty answers were dissentient.

Mr. ASTON WEBB said the proposed change was one of solute necessity.

Mr. MATHEWS opposed it. With the experience of twenty years as hon. treasurer, he was able to say that there had never been any difficulty in meeting expenses, and he feared if the subscriptions were raised many of the elder members would withdraw from the Association.

Mr. M. B. ADAMS said that if the subscriptions were raised he believed a half-guinea society would at once be started, as

there were plenty of embryo officials ready to distinguish themselves.

An animated debate was continued till a late hour. At length, on the proposition of Mr. Stannus, seconded by Mr. Baggallay, it was adjourned for a fortnight. It was past eleven o'clock when the proceedings were brought to a close.

## TESSERÆ.

### Unique Position of Architecture.

SIR FRANCIS PALGRAVE.

WE want a term to designate the intellectual rank of architecture, so closely connected with the imagination that we can scarcely term it a science, so entirely practical and subservient to our needs that we can scarcely reckon it as one of the æsthetic arts. And yet the arts must all be coerced into the architect's service. Architecture, as a branch of human wisdom, constitutes a genius of its own. Sculpture and painting are entirely founded upon the imitation of nature, whereas the basis of architecture is utility—utility in every sense, from the lowest to the highest—while it is wholly conventional in outward arrangements and forms. Architecture may borrow many a principle from nature, but she consults nature for lessons and not for models.

### Subordination in Landscape.

DAVID COX.

The student should ever keep in view the principal object which induced him to make the sketch, whether it be mountain, castle, group of trees, cornfield, river scene, or any other object. The prominence of this leading feature in the piece should be duly supported throughout, the character of the picture derived from it and every other object introduced subordinate to it, and the attraction of the one should be the attraction of the whole. All the lights of a picture should be composed of warm tints, and every tint laid on with clearness and precision.

### The Departmental Art Schools.

J. C. L. SPARKES.

To show that the schools have been most useful in the higher branches of art, it will perhaps be sufficient to mention the names of W. C. T. Dobson, R.A. (Somerset House); E. J. Poynter, R.A. (Somerset House); H. H. Armstead, R.A. (Somerset House); W. W. Oulless, R.A. (Lambeth); H. Herkomer, A.R.A. (Southampton); E. J. Gregory, A.R.A. (Southampton); Luke Fildes, A.R.A. (Chester); H. Woods, A.R.A. (Warrington); Mrs. Butler (South Kensington); Mrs. Allingham, J. D. Watson, C. E. Johnson, Clarence Whaite, S. Sidley, Edwin Bale, Wilmot Pilbury, J. Parker, C. P. and F. A. Slocombe, H. A. Gribble, and others, all of whom in the earlier stages of their career were under instruction in the schools of art. To enumerate all the ex-students who have attained honourable distinction would be altogether impracticable, but it may be stated that they also include the late Godfrey Sykes, one of the most admirable decorative artists the schools have produced; George Tinworth, the development of whose singular gifts as a sculptor of Biblical subjects is a lasting honour to the Lambeth School; Leonard Wyon and George Morgan, the latter of whom fills a position at Philadelphia similar to that which the former occupies in England; F. W. Moody, to whose skill and fancy much of the decorative work at the South Kensington Museum is attributable; Hugh Stannus, who was appointed to complete the Wellington monument after the death of Mr. Stevens, and is now engaged in working out experimentally a modification of that artist's design for the decoration of the cupola of St. Paul's Cathedral; and a host of other exponents of English art. Indeed, the work of the schools, while earnestly and persistently directed to its primary object—the improvement of our manufactures—is well engaged in the incidental encouragement of any kind of artistic talent, and it would not be wise to place too tight a rein on the direction it may be disposed to take.

### Encaustic Tiles.

L. ARNOUX.

The process used in making the tesserae and plain tiles is very simple. After the clays have been prepared and mixed in the regular way, they are dried and reduced to a fine powder. This material being placed in metallic moulds, receives by a screw such a pressure that it becomes perfectly hard, and may be handled and otherwise treated in the same manner as those produced by the old process. The chief advantages of this new process are, independently of its quickness, the avoidance of contraction and of a change of surfaces, the mechanical pressure placing the particles in closer contact, and suppressing in great part the contraction they are subject to in the plastic



state, whilst drying or firing. This contraction, which in the latter case may be from one-eighth to one-twelfth, is reduced by the new process to less than one-twentieth. The surfaces are also smoother, and the straightness of the sides perfect. With regard to encaustic pavements inlaid with coloured design, although machinery is used to impress the design and to shape the tiles, yet they are worked in the plastic state. When the press has stamped the design on the tile it appears slightly depressed, and the indentation is then filled with clays of different colours in liquid state. Afterwards, the whole being sufficiently hardened, the workman, with a flat steel, scrapes the surface till the design appears perfectly clear and correct. This process is the same which was used to a certain extent in the Middle Ages in France and England for pavements in churches, and also in the sixteenth century for making the beautiful pottery known as "Henry the Second ware."

#### Flexure of Columns.

EATON HODGKINSON.

It appeared from the researches of the great analyst Euler that a pillar of any given dimensions and description of material required a certain weight to bend it, even in the slightest degree; and with less than this weight it would not be bent at all (Acad. de Berlin, 1757). Lagrange, in an elaborate essay in the same work, arrives at the same conclusion. The theory, as deduced from this conclusion, is very beautiful, and Poisson's exposition of it in his "Mécanique," 2nd edition, vol. i., will well repay the labour of a perusal. I have many times sought experimentally with great care for the weight-producing incipient flexure, according to the theory of Euler, but have hitherto been unsuccessful. So far as I can see, flexure commences with weights far below those with which pillars are usually loaded in practice. It seems to be produced by weights much smaller than are sufficient to render it capable of being measured. I am, therefore, doubtful whether such a fixed point will ever be obtained, if indeed it exist. With respect to the conclusions of some writers, that flexure does not take place with less than about half the break-weight, this, I conceive, could only mean large and palpable flexure, and it is not improbable that the writers were in some degree deceived from their having generally used specimens thicker, compared with their length, than have been usually employed in the present effort.

#### Thickness of Ancient Arches.

JOSEPH GWILT.

Of the thickness given to the voussoirs at the crown there have been many differing examples: in general, we may put it down from one-fourteenth to one-seventeenth of the span of the arch, varying according to particular circumstances. Palladio gives the thickness of them in the ancient bridge at Rimini at one-tenth of the span to the middle arch, and one-eighth to the side arches. Again, in the bridge at Vicenza, he gives the voussoirs to the middle arch one-twelfth of the span, and the side arches one-ninth. But in a design by himself he makes the thickness of the voussoirs in the middle arch one-seventeenth, and that of those of the side arches one-fourteenth of the span. L. B. Alberti recommends them to be of the largest and hardest stones, and directs no stone to be used that is not at least one-tenth of the chord of the arch; nor (says Alberti) should the chord itself be longer than six times the thickness of the pier, nor shorter than four times.

#### The Scottish Mason.

HUGH MILLER.

The professional character of the mason varies a good deal in the several provinces of Scotland, according to the various circumstances in which he is placed. He is in general a blunt, manly, taciturn fellow, who, without much of the Radical or Chartist about him, especially if wages be good and employment abundant, rarely touches his hat to a gentleman. His employment is less purely mechanical than many others; he is not like a man ceaselessly engaged in pointing needles or fashioning pin-heads. On the contrary, every stone he lays or hews demands the exercise of a certain amount of judgment for itself, and so cannot wholly suffer his mind to fall asleep over his work. When engaged, too, in erecting some fine building, he always experiences a degree of interest in marking the effect of the design developing itself piecemeal and growing up under his hands, and so he rarely wearies of what he is doing. Further, his profession has this advantage—that it educates his sense of sight. Accustomed to ascertain the straightness of lines at a glance, and to cast his eye along plane walls or the mouldings of entablatures or architraves in order to determine the rectitude of the masonry, he acquires a sort of mathematical precision in determining the true bearings and position of objects, and is usually found when admitted into a rifle club to equal, without previous practice, its second-rate shots. He only falls short of his first-rate ones because, uninitiated by the experience of his profession in the mystery of the parabolic curve, he fails, in taking aim, to make the proper

allowance for it. The mason is almost always a silent man: the strain of his respiration is too great when he is actively employed to leave the necessary freedom to the organs of speech, and so at least the provincial builder or stone-cutter rarely or never becomes a democratic orator. I have met with exceptional cases in the larger towns, but they were the result of individual idiosyncrasies developed in clubs and taverns, and were not professional.

#### Defective Masonry.

EDWIN NASH.

There is abundant evidence in both ancient and modern work, of the defective mode in which the materials of walls are put together, and though this may be of comparatively slight importance when the walls have not much duty beyond that of being enclosures of buildings, yet when they have to sustain great weights or thrusts, it becomes of paramount importance that their materials be well applied and united, and this fact seems scarcely to have been fully appreciated since the best days of the Greeks and Romans. The cracking of the piers carrying the dome of the Panthéon at Paris is a most instructive warning under this head, but the chief defect that I wish to allude to is the absence of that uniformity in the horizontal strata of the walls which the word "homogeneous" most expressively indicates, and of which defect the tambour wall under the dome of St. Peter at Rome is a notable example. In a rapid age like the present it is not likely that this homogeneity or similarity of material through the whole thickness of the wall will be thoroughly attended to. In buildings even of considerable excellence the water-tables of buttresses often break away from the body of the buttress, especially when the bulk of the work is of rough stone. This irregular settlement shows that the dressed stone, being more completely laid than the rough stone, the two do not harmoniously blend, and that a more thorough bonding is needful by using longer alternate stones than is customary, and it also suggests the idea that the buttresses may have too great a projection, inasmuch as the outer part may not catch the due influence of the weight.

#### Henri Deux Ware.

J. C. ROBINSON, F.S.A.

The pottery known as "Faïence de Henri Deux," or of "Diane de Poitiers," or "Henri Deux ware," is a very remarkable and original variety of earthenware, produced somewhere in France during the later years of Francis the First's reign and the reign of Henri Deux. Although it has excited the keenest interest and curiosity amongst amateurs and collectors, and, in consequence, the pecuniary value of the specimens has attained to a fabulous ratio—very far, indeed, beyond that of any other variety of decorative pottery—nothing is known with certainty respecting either the producer or the place of its origin. With the exception of certain indications of the ownership of some of the pieces, evidenced by armorial bearings and initials, everything respecting this ware is still shrouded in mystery. Its great pecuniary value has arisen from several causes, but especially from its intrinsic artistic merit, for it cannot be denied that the style of design is singularly original and beautiful. Whilst displaying great variety in their forms and decorative details, the pieces are all conceived in the same characteristic general style, which, though strongly and unmistakably national, and even typical of a well-known and brilliant epoch, is also in the highest degree both personal and local. In fact, there can be little doubt that, as in the case of Palissy ware, this famous pottery was the work or invention of one individual artist, whose labours were evidently anterior to those of the famous *artiste en terre*. This ware is, moreover, scarcely less remarkable from a technical point of view. Its fabrication displays novelties of a singularly interesting nature. Every circumstance, indeed, denotes that the producer was an original genius—one of those representative men who arise only at rare intervals in the province of art, as, indeed, in any other sphere.

#### Watertight Sewers.

SIR R. RAWLINSON, C.E.

Portland cement concrete and mortar may be so used in main-sewer construction as to form a sewer which shall be watertight, retaining sewage and excluding subsoil water. Within the excavated trench form with concrete a bed for the brickwork. Float this bed of concrete over with a layer of Portland cement mortar not less than 1 inch in thickness. Set the invert and side-wall bricks in a single ring of 4½ inches, and then give this a covering of mortar similar to the first bed over the concrete, and set the inner 4½ inches of brick upon it; the work will then be 11 inches in thickness—9 inches of bricks, 2 inches the two beds of mortar. The upper portion of the sewer to be constructed in a similar manner if the subsoil water is liable to rise above the top of the sewer. Brick sewers carefully constructed in the manner indicated will be watertight.



## NOTES AND COMMENTS.

SPECIAL facilities have been granted from time to time to the Science and Art Department, through the well-known courtesy of Pope LEO XIII., for taking copies, &c., of valuable art works at the Vatican. In 1883 a mould was taken of the *Venus* of CNIDUS, and since then copies were made of RAPHAEL'S designs as they appear in the tapestries. Permission has now been obtained for taking a model of PINTURICCHIO'S decorations for ALEXANDER VI.'s rooms, which are not often seen by the general public. The decorations include frescoes and modelled work in stucco, painted and gilded, covering the spaces in the vaulted roofs between the pictures.

THE Municipal Council of Paris have shown their respect for the late M. BALLU by decreeing that his bust is to be placed in the new Hôtel de Ville. M. BALLU was one of the architects of the building, his associate being M. DEPERTHES, and the planning is equally creditable with the exterior appearance to their skill. A stranger can always find his way to any one of the numerous offices without difficulty, and such a thing as a dark corridor is unknown.

ONE of the artistic developments of the times—little short, indeed, of a revolution—is certainly that one which owes so much to the enterprise of Messrs. DOULTON & Co., of the Art Potteries, Lambeth. It is with pleasure, therefore, we are able to announce that the Council of the Society of Arts have (with the approval of the president, H.R.H. the Prince of WALES) awarded the Albert Medal to HENRY DOULTON, “in recognition of the impulse given by him to artistic pottery in this country.” The influence of art in one craft must tend to raise the standard of excellence beyond the limits of its own craft, and it will be acknowledged that Messrs. DOULTON have done even more in art matters than simply to stimulate the production of beautiful samples of the potter's art.

IT would be an interesting problem for a statistician to discover the cost of the wreaths and coronals which were borne in VICTOR HUGO'S funeral on Monday, and of which the majority are now fading on the steps of the Panthéon. The origin of all the flowers would also be worth knowing. One house alone in Paris received over 1,000*l.* for floral memorials. A thousand francs was a common price. That price was paid by the representatives of the Ecole des Beaux-Arts, the Porte St.-Martin Theatre, the Greek students, the Republic of Haïti, the Society of Dramatic Authors, the Lycée Fénelon, and by individual admirers. A higher sum was given by the Press Syndicate. The good taste of the French was shown in the arrangement, and it was difficult to see any which were not harmonious in colour. The English wreaths were less costly. Lord TENNYSON and Mr. BROWNING sent two, but it would not be safe for the French people to suppose that the remaining contributors from England were equally distinguished. The Arts Club, the Athenæum Club, the British Museum, the two rival Academies of Music, Worcester College, and the Institute of Painters in Water-Colours were among those represented in the floral display.

AN appeal has been issued for funds for the proposed restoration of the parish church of St. Mary, Combs, one of the most ancient and interesting churches in Suffolk. The Committee say “this ancient church suffered greatly in 1871 by the explosion of gun-cotton at Stowmarket, by which many of the windows then remaining were destroyed. We have, however, many fragments of beautiful old stained glass, which might be made up and restored. The roof of the south aisle is in a deplorable condition, and must be renewed; indeed, the whole roof requires much repair. The old flint-built walls have been defaced here and there by insertions of modern brick masonry; these should be removed and replaced by flint-masonry. The splendid tower is in a sad state, and the bells also in a deplorable state. One is cracked and upset, two are rung by ropes fastened to the clappers, and the remaining one can only be chimed. The church contains a number of ancient carved oak benches, and two screens. The benches are

disfigured by deal planks fastened on them to form pews, and there are besides pews of varied forms, colours and height, erected in times past to suit the taste of their occupiers. These pews must all be removed, and the benches restored to their old form and character. The parishioners wish to restore their church, not to make it a new one; and all the ancient seats, screens, windows, &c., will be carefully preserved. Mr. HERBERT J. GREEN, of Norwich, has been appointed architect, and has made estimates and plans for the restoration. For a partial restoration the lowest estimate is 900*l.*; for a thorough one, 3,500*l.* Combs is a large scattered agricultural parish, with few church people of any means, and it is hopeless to expect to raise more than a third of the lower sum in the parish and neighbourhood.”

THE late GUSTAVE DORÉ was a native of Alsace, and it is needless to say that the fate of his province was a source of grief to him. Among his bequests was one of 45,375 frs. to the Société de Protection des Alsatiens-Lorrains, which is to be applied to the founding of four bourses and partly towards the completion of the orphanage. An exhibition is now open in one of the *salles* of the Louvre in order to raise funds to support the society, which has expended 3,310,112 frs. since it was formed. Among the means adopted is the establishment of colonists in Algeria, and the settlements are said to be entirely prosperous.

THE eighth annual meeting of the Society for the Protection of Ancient Buildings took place on Thursday in the large room of the Society of Arts, Mr. WILLIAM MORRIS presiding. In the course of the proceedings the Rev. T. W. NORWOOD, F.G.S., read a paper entitled “A plea for the protection of ancient buildings for the sake of history, art, and religion.”

WITH reference to the statement that Mr. MILLAIS'S largest picture at the Academy, *The Ruling Passion*, was destined for the Sydney National Gallery, the honorary purchasers for the National Art Gallery of New South Wales write to the *Daily News*:—“It is possible that some prosperous colonist may have bought the picture with a view to its presentation to the National Art Gallery of New South Wales; but you would oblige by according us the permission to state that it has not been purchased by the responsible authorities of that Gallery, nor has the doing so been at any time under discussion.” The rumour referred to may have been erroneously based upon the fact that Mr. MILLAIS'S *Captive* has been acquired for the Sydney Gallery. It will probably leave the custody of the Fine Art Society, for whom it has been very successfully engraved, in the course of a week or so.

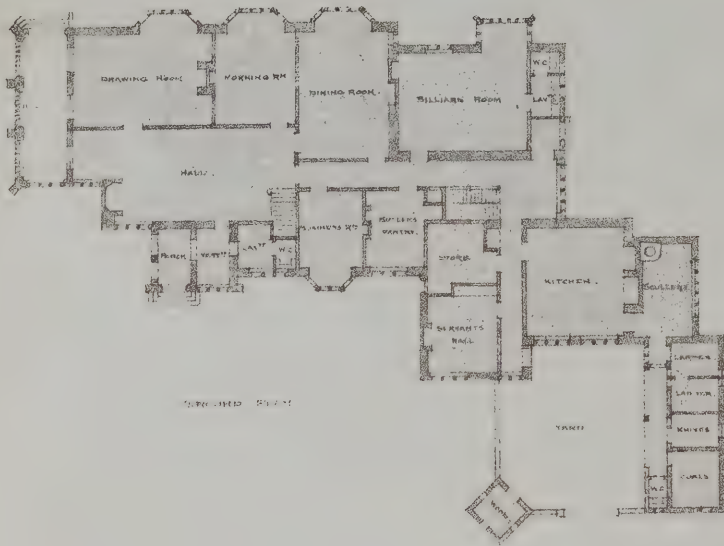
IN the list of French painters the name of ARMAND LELEUX is to be seen, but it is long since he exhibited. A few days ago he died in Paris. He was one of the pupils of INGRES, and more than forty years ago he was known by his pictures of interiors of workshops, forges, and the like. In 1844 he obtained a third-class medal. Soon afterwards he was sent on a mission to Madrid, and on his return he depicted many Spanish scenes. In 1859 he obtained a first-class medal.

EXPLORATIONS of the ruins of Roche Abbey, which forms part of the Scarborough estate, are still being pursued. The unearthing of a large quantity of pieces of coloured glass, supposed to have been parts of the large chancel window, has already been recorded. These pieces, together with a white glass cross, have been made into a window. The cross forms the centre of the window, and is approached by a number of small steps formed in glass. The border is made of various colours, and is of irregular pattern. The window has since been fixed in the lobby of the chapel at Sandbeck. Through the advice of Mr. W. ST. JOHN HOPE, of Derby, who visited the abbey at Easter, the base of the dining-room of the monastery has been discovered. This was found only a few inches below the surface adjoining the chapter-house. Several parts of the interior in both the north and the south chapels have been restored. Three of the large columns of the nave are exposed to view, and altogether the explorations are of a highly-interesting character.











6<sup>th</sup> 1885.

WOOLPITS, SURREY for  
HENRY DOULTON ESQ.  
ERNEST GEORGE & PETO ARCHT.



"INK-PHOTO." SPRAGUE & CO., LONDON.







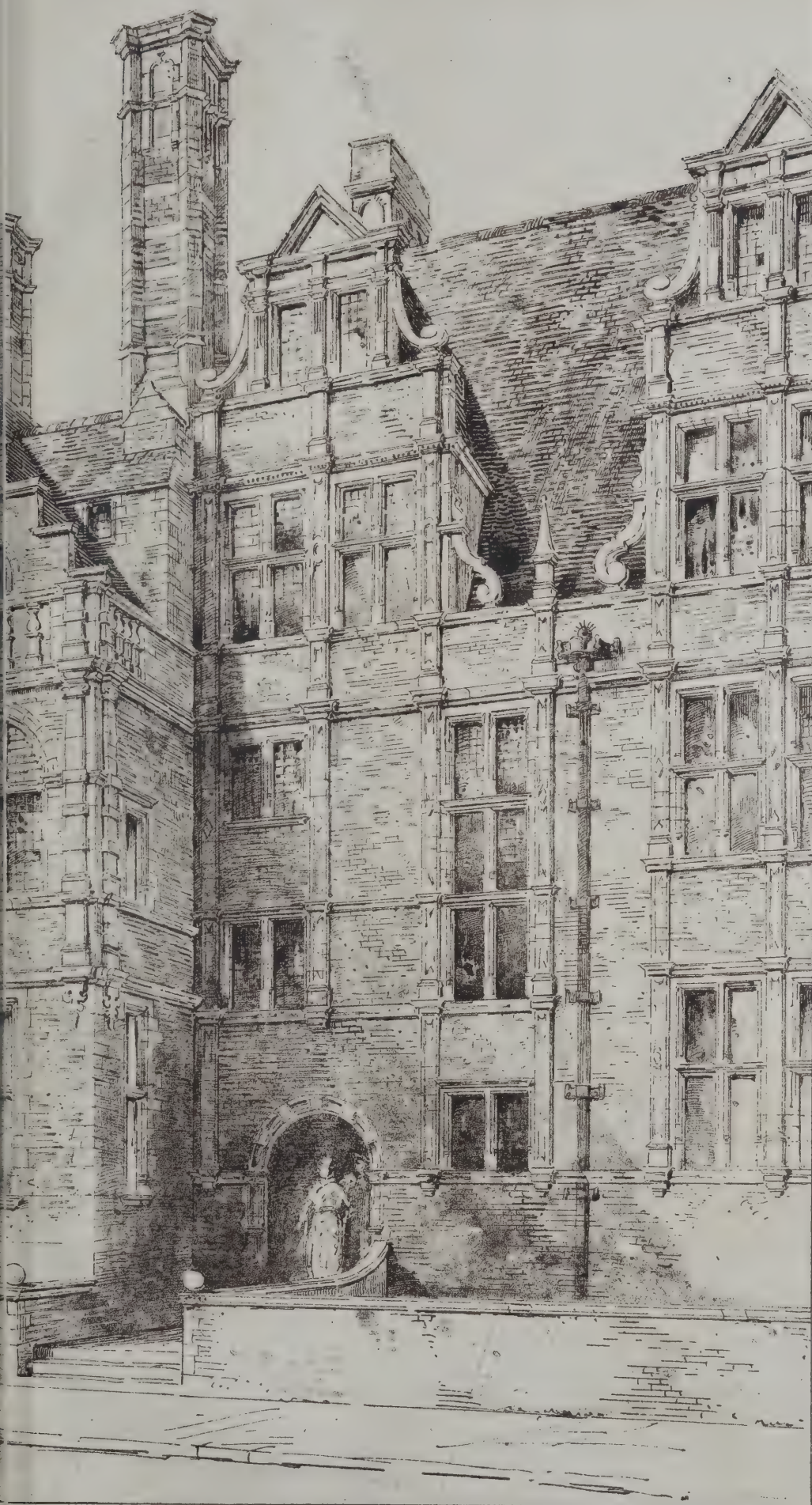




WM. KEMP-WELCH ESQ<sup>R</sup>.  
COLLINGHAM GARDENS, S.W.  
ERNEST GEORGE & PETO, Arch<sup>ts</sup>





















June 6<sup>th</sup> 1885.

DR ESQ.  
COT.  
& PETO  
ARCHT.









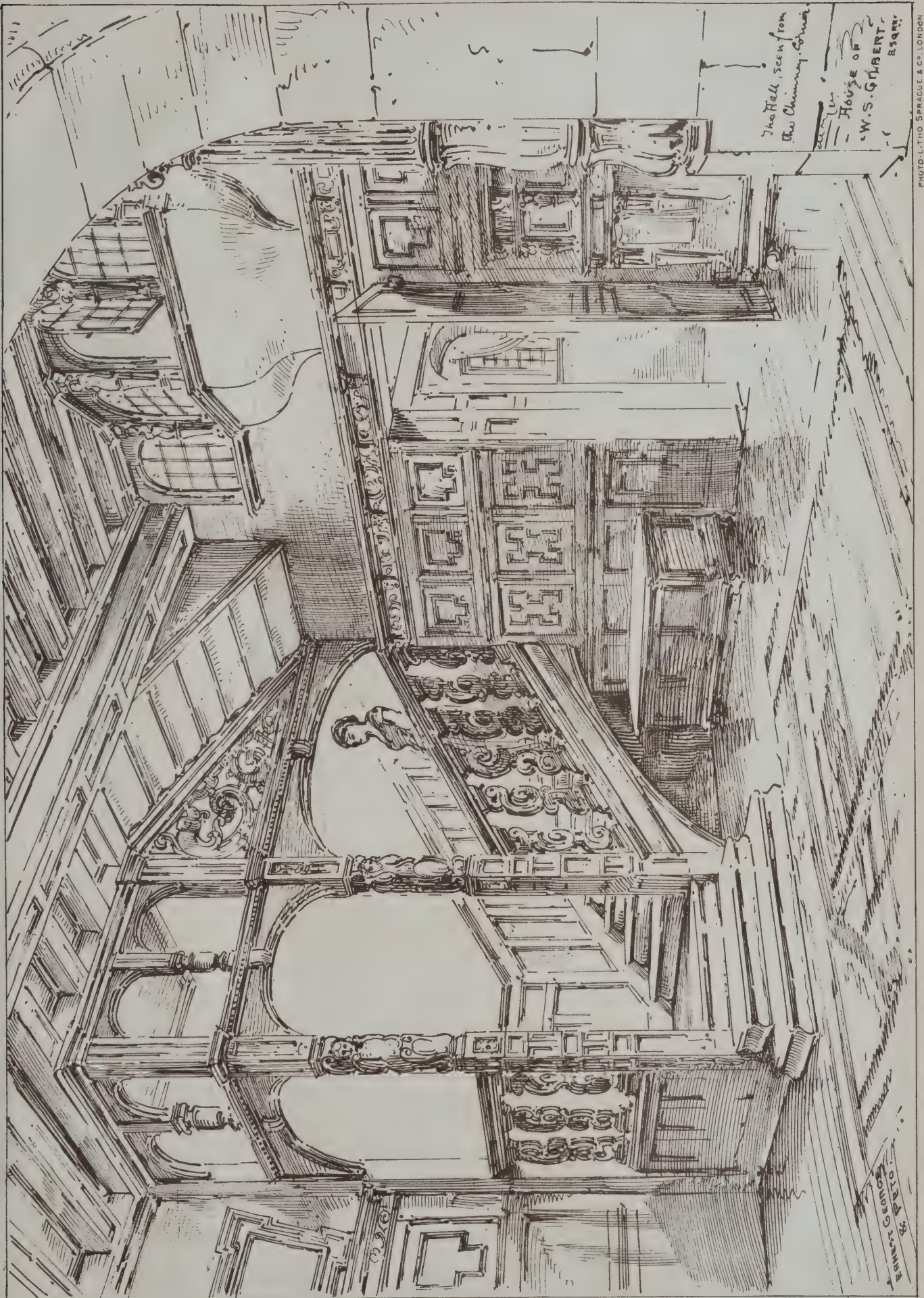




MEMORIAL CHURCH  
STREATHAM, SURREY.  
ERNEST GEORGE & PETO, ARCHTS.













## ILLUSTRATIONS.

WOOLPITS, SURREY.

WE have much pleasure in illustrating this week several designs, at present exhibited in the Royal Academy, by Messrs. ERNEST GEORGE & PETO, of 18 Maddox Street W.

This picturesque house is about to be commenced for Mr. HENRY DOULTON, on the beautiful slopes just below Ewhurst Mill, in Surrey. On entering the house there is a fine hall, 34 feet by 17 feet, with an oak staircase arcaded at one end, the window at the other end of the hall opening into a loggia, which commands the best point of the fine view which is obtained from the house. Along the south side of the hall are arranged the drawing-room, morning-room, dining-room, and billiard-room, also commanding extensive views. The hall is panelled with oak up to the top of doors, while panellings of other woods are used for the various rooms. The billiard-room internally is to be lined with Doulton ware throughout, of a warm and suitable colouring. Several of the ground-floor rooms and hall have beamed ceilings, and the house generally is finished in a perfect manner. Externally, the house will be built with special made thin red bricks, and all the dressings and mullions will be of buff terra-cotta, supplied by Messrs. DOULTON. The roofs will be covered with Horsham stone slabs. The whole of the grounds have been laid out with very great care by Mr. E. KEMP, of Birkenhead.

MEMORIAL CHURCH, STREATHAM.

THIS church is about to be erected as a memorial to the Rev. STENTON EARDLEY, the late vicar of Immanuel Church, Streatham Common. The church as designed, with a north aisle only, provides about 500 seats, but the church is schemed for the future addition of a south aisle.

The architectural period chosen for the building is Perpendicular, and a principal feature of the design is the long line of clerestory windows, giving pleasant high lighting to the interior. The aisle is under three lead-covered roofs with low-pitched gables. The chancel is a continuation of the nave, the ridge line of the roof being unbroken. North of the chancel is a lofty organ chamber, above which is the belfry, the latter approached by an octagonal turret staircase. The church is of red brick, the dressings, mullions, &c., internally and externally, being of buff terra-cotta. The whole grouping of the building is, we consider, thoroughly picturesque and satisfactory, and it is treated with a breadth and quietude which gives singular dignity to the grouping.

HOUSE IN COLLINGHAM GARDENS, S.W., FOR MR. W. KEMP-WELCH.

THIS house forms one of the exceptionally interesting groups which Messrs. ERNEST GEORGE & PETO have been designing for Collingham Gardens, South Kensington, some of which we illustrated last year.

HOUSE AT ASCOT.

THIS house is about to be commenced near Ascot for Mr. CHARLES STONOR. The house is grouped round three sides of a courtyard, one side of which is formed by the picturesque and somewhat exceptional feature of a domestic chapel. This chapel is approached from the house, as well as having an external door which will enable it to be used by neighbours. An interesting feature in the chapel, which is 33 feet by 15 feet, is the western gallery with arcaded oak screen, approached from the first floor of house, and which will form a private gallery for the family. This is also approached by a visible and winding oak staircase from the general level of the chapel. The chapel roof is a very handsome one of English oak, of hammer-beam construction. On the north side of the chapel is placed the sacristy. Round the ample hall, which is panelled and has a beamed ceiling, are placed the drawing-room, morning-room, and dining-room. The latter is panelled with oak, and has a beamed ceiling. Along a portion of the south side is a verandah, which is so schemed as not to darken

the rooms along the front of which it runs, by their having bay windows which project as far as the face of verandah. Externally the lower portion of the house is built of rough cast on brickwork, with red-brick quoins. The chapel is entirely built of red brick, with Ham stone dressings. The upper portion of house is built partly with weather tiling and partly with oak half-timber work.

INTERIOR OF HALL, 19 HARRINGTON GARDENS, SOUTH KENSINGTON.

WE have much pleasure in being able this time to give a drawing of an internal portion of one of Messrs. ERNEST GEORGE & PETO's houses, as, though the insides are finished with great care, it is but seldom that they have ever managed to prepare a drawing enabling the public to see in what way they treat this portion of their work. The piece which they have selected to be illustrated this year is from a very beautiful house which they have lately built for Mr. W. S. GILBERT in Harrington Gardens, S.W. The drawing shows the oak-panelled entrance-hall, with its beamed ceiling as seen from the chimney corner in the hall. The staircase, with its steps in single blocks of solid oak, and its beautiful carved newel-posts running up to and supporting the ceiling, is also seen in this drawing. To the right of this is the picturesque oriel window, which gives light from Mrs. GILBERT's boudoir on to the hall. The boudoir is also lighted, of course, from the front of the house. We only wish that we could illustrate many of the other portions of this very interesting house, with its rich panellings of oak and solid rosewood, &c., and high old-fashioned chimneypieces reaching up to the ceilings. The one in the drawing-room is a hooded chimneypiece, up to ceiling, after the manner of those in the old French castles, being built in solid alabaster, and is a wonderful specimen of carving after the manner of the sixteenth century.

## VICTOR HUGO ON ARCHITECTS AND RESTORATION.

THE following extracts from the preface to "Notre Dame de Paris" (1831) may be of interest:—It is now several years ago, while visiting, or, to speak more correctly, while prying about in the church of Notre Dame, the author of this book discovered in a dark nook of one of the towers the following word, cut with a chisel on the wall—"Thanatos." The Greek capitals, black with age and sunk to some considerable depth in the stonework; the indescribable characteristics of Gothic writing impressed upon their forms and attitude, as if revealing that they were written by a Mediæval hand; and, above all, the sinister and fatalistic meaning they expressed, impressed the author forcibly. He asked himself, he endeavoured to imagine, what manner of man this troubled soul could have been who determined not to leave this world without imprinting this stigma of crime or of misfortune upon the forehead of the old cathedral. The wall has since been either whitewashed or scraped (I do not remember which it is), and the inscription has disappeared. It is thus that the wonderful churches of the Middle Ages have been treated for the last two hundred years. They are mutilated on every hand, both from without and from within. Th-priest whitewashes them, the architect scrapes them, thee comes the populace who pulls them down. Thus it is than apart from the fleeting recollection of it recorded here by tht, author of this book, nothing now remains of the mysterioue word graven on the sombre tower of Notre Dame—nothing os the unknown destiny which it summed up in such a melancholy fashion. The man who wrote this word upon the wall has been blotted out several centuries since from the land of the living; the word has been, in its turn, effaced from the walls of the church; the church itself will perhaps be shortly effaced from the earth. This word was the cause of this book being written.

Extract from Note added to the 8th Edition, 1832:—

The author expounds and expatiates in one of the chapters of this work upon the present decadence of architecture, and upon what appears to him to be the almost inevitable extinction of this kingly art, an opinion unhappily deeply rooted in him, and founded on mature consideration. But he feels here the necessity of explaining that he trusts most sincerely that he may one day be proved to be in the wrong. He is aware that art in all its various forms has much to hope for from the rising generation, whose budding genius one perceives in our studios. The seed is cast into the furrow, the harvest will certainly be fruitful. He fears, how-



ever (and the reader may see the reason why in the second volume of this edition), that the fertility of the ancient soil of architecture which has been for so many centuries the most productive field of art, may become exhausted. However that may be, there is at the present time in our young artists so much life, so much power, and, so to speak, so much predestination, that in our schools of architecture in particular at this moment, professors who are detestable turn out excellent pupils not only without knowing it, but positively in spite of themselves, exactly the reverse of the potter alluded to by Horace, who meditated on urns and produced pots: *currit rota, urceus exit*.

But at any rate, whatever the future of architecture may be, in whatever manner our young architects may one day settle the question of their art, while we are waiting for new buildings, let us preserve our ancient buildings. Let us inspire our countrymen with a love for our national architecture. This, the author avers, is one of the principal objects of this book, and also one of the principal objects of his life.

"Notre Dame de Paris" has, perhaps, opened out some new views with regard to Mediæval art, that wonderful art which is even at the present time unknown to many, and, what is still worse, is unappreciated by more. The author is very far from considering that he has fulfilled the task he voluntarily imposed upon himself. He has already pleaded on more than one occasion the cause of our ancient architecture, and has denounced aloud many profanations, many demolitions, and impious acts.

He will continue to do this. He undertakes to recur frequently to the subject; he will return to it. He will be as indefatigable to preserve our historical monuments as the iconoclasts of our schools and academies are determined to attack them. It is an afflicting circumstance to see into what hands the architecture of the Middle Ages has fallen, and in what manner the botchers (*gâcheurs de plâtre*) of the present day treat the mine of this grand art. It is a scandal that we intelligent men should look on and do nothing more than cry out. And it is not merely a question as to what takes place in the country, but of what is done at Paris, at our very doors, beneath our windows, in this great city, in the city of Lutetia, in the city of the printing press, of oratory, of thought. The author cannot resist the desire to finish this note by pointing out some of the acts of vandalism which are proposed, discussed, commenced, and carried out calmly under our noses, under the nose of the artistic public of Paris, and in spite of criticism which the audacity of the thing puts out of countenance. The Archbishop's Palace was recently pulled down—a building of little value. The loss is not very great; but in the same block with the Archbishop's Palace they have destroyed the Bishop's Palace, a rare relic of the fourteenth century, which the iconoclastic architect could not distinguish from the rest of the buildings. He has plucked up the corn with the tares; it is all the same to him. It is proposed to pull down the admirable chapel at Vincennes to construct some sort of fortification which Daumesnil never wanted. While that hovel, the Palais Bourbon, is being repaired and restored at a large expense, the magnificent stained-glass windows of the St. Chapelle are allowed to go to ruin by the action of the equinoctial gales.

A hoarding has been put up within the last few days around the Tower of St.-Jacques de la Boucherie, and one of these fine days it will fall under the pickaxe and be pulled down.

A bricklayer has been found to build a little white house between the venerable towers of the Palace of Justice. Another has been found for the Château of St.-Germain-des-Prés, the feudal abbey of the three spires. Another will doubtless be found to pull down St.-Germain-l'Auxerrois.

All these bricklayers, who call themselves architects, are paid by the Government or out of the privy purse, and wear green coats. All the ill that false taste can do to true taste they do. One of these men at the present time (deplorable sight!) holds possession of the Tuileries; another has scarred Philibert de l'Orme full in the face; and it certainly is not one of the least scandals of our age to see with what effrontery the heavy architecture of this gentleman swaggers in front of one of the most delicate fronts of the Renaissance period.

### EDINBURGH ARCHITECTURAL ASSOCIATION.

THE series of Saturday afternoon visits in connection with this Association was brought to a close for the season on Saturday, when a party, numbering over sixty members and their friends, made their annual excursion to Inchcolm Abbey, Donibristle, Dalgetty, and Aberdour Castle and Church, under the leadership of Mr. Hippolyte J. Blanc. The party left by special steamer in the forenoon, and on reaching Inchcolm the company assembled in the chapter-house, where an interesting paper, sketching the history of the monastery and abbey, was read by Mr. Blanc, who, by a plan prepared

from a survey of the buildings, together with a number of photographs specially taken, illustrated the various features of the edifice in the order of reference. Commencing with the Columban oratory, stated to have been erected in the sixth century, the company visited the various parts of the buildings, from the earliest in 1123 to the latest recorded in the fifteenth century. Donibristle, Dalgetty, Aberdour Church and Castle were afterwards visited in turn, and the many interesting features were pointed out. At the close of a very enjoyable day a hearty vote of thanks was accorded to Mr. Blanc for his very instructive papers.

### DEMOLITION OF CHURCHES IN YORK.

A PUBLIC meeting was held in the Corn Exchange at York on Saturday night, under the auspices of the Society for the Protection of Ancient Buildings, to protest against the destruction of certain ancient churches. The Hon. R. C. Grosvenor occupied the chair. The chairman said he felt somewhat in a peculiar position in presiding at a meeting in the ancient city of York to excite public opinion in favour of the preservation of the churches of the city. He was told that one thing that would be said in opposition to them—he understood that there might be some opposition to their views—was that their action was premature, and, in fact, that they were not face to face with a proposal for the demolition of certain York churches. He maintained, however, that the churches were of sufficient dignity and importance to justify them in meeting together not only to prevent the demolition which they might have supposed absolutely imminent, but that they might look forward into the future and raise in York such a feeling in favour of the preservation of those ancient churches that no one, either existing now or to come hereafter, would dare to lay a finger on them in any way. Whether rightly or wrongly, the Society for the Preservation of Ancient Buildings acted upon information extracted from a newspaper in York. That extract gave them a schedule of churches to be dealt with in a variety of ways; and they thought that, unless it were carefully watched, and unless it were publicly known that those churches were subjects of interest and would not quietly be allowed to be interfered with, those proposals would end in the disuse and eventual loss and destruction of those churches. He did not now propose to go at any length into the merits of the individual churches. He would, however, ask those present to take one instance which he himself had seen that day—namely, the church of St. Crux. That church, he thought no one would deny, was at one time one of the finest examples of a town church in England. He would, however, ask any one to look at it in its present condition and say what they thought of the treatment it had received. He had seen, besides, a picture of the interior of that church—a picture of very great merit and finish—showing that until recently the edifice displayed the interior of a most beautiful English church. But now what did he see? The whole church open to the sky and wind and wet, and everything allowed to have its will with that ancient building. If that had been done with regard to St. Crux, he thought they would agree with him that the society were justified in sending representatives to York—if anything could justify them—to ask the inhabitants to agree to a resolution that any interference, or demolition, or destruction, or disuse of the ancient churches of the city was something that would no longer be stood. He himself was neither an architect nor an archaeologist, but he had no doubt that there were many present who took, or would take, the same view of the matter as he did. He had the very greatest possible veneration and respect for works of ancient art, of whatever kind they might be; he looked upon the preservation of those relics of art as far more important than all the gold and silver and dross which surrounded the modern life in which they lived, and he would rather, for his own part, be present at a meeting which had for its object the preservation of those priceless memorials than do work of any other kind.

Mr. Wm. Morris, who next addressed the meeting, said that a city that had played such a part as York had in the history of the country, had yet kept itself together, and still to a certain extent might be looked upon as a due representative of what the city had been so many hundred years ago, and which had so many tokens of antiquity in it, must surely be more or less a place of pilgrimage for the whole world, and therefore he considered York, with its ancient buildings, to be part of the property of the whole world. That was his excuse for appearing on that platform that evening as the delegate of a society which had done a great deal throughout England in calling the attention of the population in general to the intrinsic merits of those ancient buildings with which the country was adorned. He could not help thinking that what lay at the root of the possible demolition of those buildings was that the promoters of demolition did not know their value. The expenses of a sustentation fund to keep the buildings in their places was



talked of as a very serious matter. Now if they suggested the removal of York Minster on such a plea there would be an universal condemnation of the idea, and a ready subscription of money to maintain the fabric. The churches dealt with in the York Church Extension scheme, though they might seem humble and modest, ought surely to have their share in that very same answer—"We can't afford to lose them." There was an idea, perhaps, in some people's minds that the value of a building was proportionate to the extent of the ground it covered. That was quite a mistake. There were, he ventured to say, many small and humble parish churches in England which were, in their way, quite as worthy of preservation as the largest cathedral in the country. Some of the churches in York were decidedly of that type. On several occasions he had been long days in wandering about the city, and every time he had been there he had found something fresh to see and admire in its ancient buildings. On that day he went into a church he had not entered before—namely, that of St. Martin-cum-Gregory. Now that church was one of those scheduled. He said distinctly that it was a noble example of a city church. It had also in it, as many churches in York had, some of the most beautiful specimens of stained glass he had ever seen. There was another church which he was told, though he could scarcely believe it, was considered by some people not to be worthy of preservation—namely, that of St. John, by Ouse Bridge. That church was a beautiful and rather distinguished example of a late form of Gothic. It was spacious and convenient for divine service; and it also had some noble specimens of the art of the painter in glass. The loss of such a church would be most seriously felt in York. Moreover, they must not look at those ancient buildings as so many works of art put under glass cases. They were part of the streets of York. If they pulled those churches down they would have a very commonplace city. The church of St. Crux had been wrecked because the people who had it in charge did not sufficiently take to heart the exhortation of that society to be very careful about the use of that terrible process, restoration. He could quite understand that the gentlemen who drew up the schedule really thought they were not doing quite as much damage by disusing the churches as they would do by destroying them. But, in point of fact, the two meant the same thing. If there was no sustentation fund to keep it going, and if it was not used, a building would die. There was a distinct life about a building, and especially about a church. If a building did not fulfil its proper functions it really died. An illustration of his meaning was to be found in Holy Trinity, Goodramgate, which was one of the most beautiful little churches in England. He considered that it was a disgrace to the city of York that it should be allowed to be in the state it was in now. In conclusion, he entreated them to find some use for their ancient churches. As to secularising churches, using them for commercial purposes, he would by no means do so. He thought there might be a middle course between using them for commercial purposes and deserting them. He thought they might be used for parish purposes, schools, or something of that kind. And, moreover, there was surely sufficient wealth in Yorkshire to provide sustentation funds. If not, then let them appeal to the whole of England, and if that was not enough to the English-speaking race, to the Americans who came over here by shoals. Surely they would get a response to their appeal. At any rate, he urged them to try to save themselves from the disgrace of inflicting a blow upon education, history, and civilisation by destroying buildings which it was their duty to protect. He concluded by moving, "That this meeting regrets the proposed destruction of certain ancient churches in the city of York, and hopes that steps may be taken for their preservation."

The Hon. Charles Wood seconded the resolution. He spoke of the historical, architectural, and antiquarian value of the churches which it was proposed to disuse, and said it was their duty to preserve them until the time arrived when they could be used.

Mr. Poppellwell Pullan: I am deputed by the council of the Royal Architectural Institute to express their full sympathy with the objects of this meeting—to express their regret that there should be found in this venerable ecclesiastical city a number of men who, on utilitarian principles, propose to destroy at one fell swoop seven or eight of their parish churches, which are at once landmarks of history and examples of architectural art. We regret this proposed destruction, I say, and our regret is deepened by a recollection of an opposite spirit to that of destruction which animated the citizens of York in former days. It was my privilege thirty-nine years ago, in 1846, to visit York, together with many fellow-members of the Architectural Institute, on the occasion of their annual congress. Those who were present will never forget the hospitality, the enthusiasm, the antiquarian zeal with which we were then welcomed. Some amongst you may have been present on that occasion; others may have heard of it. Under the guidance of that master of archæology, Professor Willis, we traced the gradual construction of the minster stone by stone. Under the guidance of

others, perhaps better versed in the local antiquities, we made a pilgrimage to the various parish churches. Amongst the antiquaries present on that occasion I may mention a name that should be dear to all citizens of York, for to his untiring zeal and perseverance they are indebted for a monograph of the minster more complete than anything that has been accomplished by any other man for any other cathedral. I mean John Browne, of whom York has good cause to be proud. Alas! Times have changed since then, for had any one then been bold enough to stand up and suggest the destruction of half a dozen of your parish churches, he would have run a risk of being torn to pieces by the crowd of enraged and enthusiastic antiquaries, as Hypatia was by the monks of Alexandria. Times are sadly changed when an architectural institute promoting the study of antiquities finds it necessary to send delegates to protest against acts of vandalism contemplated in the city which once so warmly sympathised with their zeal for the preservation of those ancient buildings, without which York would be an unattractive town. The term in the schedule is the apparently harmless word "disused." Let us consider what it means in its mildest acceptance. It means the loss to the parishioners of their accustomed services. These may be few in number, but they have, through a long series of years, become attached to their venerable churches, and love every nook and corner of the edifice where they worship according to the manner of their forefathers. But "disuse" implies decay. As it is not likely that there will be a sustentation fund for the preservation of the disused churches, it is probable that they will fall into ruin, like the church of the Holy Trinity, which I visited this morning. Now ruins are very picturesque. Fountains Abbey, Rivaulx, Jervaulx are very picturesque, and your noble minster never looked more so than as I remember seeing it after the fire in the nave in 1840, when the roof and the groining of the nave had fallen in, and you saw the tracery of the windows darkly defined against the sky. Still, I do not think you would care that York should be a city of ruined churches. But "disuse" leads frequently to something worse than decay—it leads to desecration. Those who know the larger cities of France and Italy will recollect the dozens of old churches that have been turned into bakeries, tanneries, and coachhouses at the time of the godless Revolution; and many of you will have been horrified to learn that to-day the French Government perpetrate the most terrible act of desecration ever known—that they desecrate an edifice dedicated to the worship of God in order that the body of a literary man who, if not himself an infidel, was the idol of infidels, might be deposited in it. The church of Ste.-Geneviève is again turned into a Panthéon, and its fine frescoes are to be demolished as unsuitable decorations for an edifice in which are interred the opponents of Christianity. I must own that I do not remember to have seen any old church in England turned to vile uses. We have still some respect for consecrated buildings; but who knows to what length the irreverent and levelling spirit of the age may lead? We have not yet heard of any proposal to turn your noble minster into a gymnasium, or otherwise utilising it for the benefit of the public; but this proposed destruction of churches is a step downwards in that direction, and we should recollect the old saying, "Facilis descensus Avernî." Again, "disuse" may lead to something even worse than desecration—I mean to destruction. For if a church be desecrated at one period, it may be reconsecrated for Divine worship at another, like the Panthéon or church of Ste.-Geneviève, or like the Madeleine, originally a Panthéon, now a church; but, if it be destroyed, a landmark of history is swept away for ever. All our old buildings, but especially our churches, are landmarks of history—ecclesiastical, national, provincial, individual, and artistic. If all documents were swept away and traditions forgotten, our old buildings would lead us to infer in what place and how long the Saxon, Norman, Plantagenets, &c., flourished. For instance, even if there were no remains of the Saxons under the minster choir, the tower of St. Mary, Bishop-hill parish, would show us that the Saxons had ecclesiastical establishments in this city. The architecture, the stained glass, and the monuments of your city churches afford the antiquary dates as to the men who built them and the times in which they lived, evidences of the progress of art, proofs of pedigrees and family history, and afford otherwise many connecting links in the long chain of national and provincial history, which it is more desirable to preserve even at the risk of a little inconvenience. I repeat they are evidences of the progress of the art of architecture, and upon that ground another reason for their retention may be urged. It may not be known to you all that there is one Gothic style which is peculiarly English, that is the Perpendicular, in which style the choirs of the minster and most of the parish churches are built. I have seen many churches in various parts of Europe, but amongst them have discovered nothing at all of the same character as our own national style. Hence we should value them for their architecture. I see from the schedule that it is proposed to remove bodily the church of St. Cuthbert. This is one redeeming feature in the programme. It is far better



that it should be removed than restored after the fashion of most late restorations, in which the original features of the edifices are so disguised as not to be recognisable. The restoration of our cathedrals and valuable churches should be undertaken by a committee of antiquaries. No architect in large practice has the time to give that serious study to restoration which is absolutely necessary. My final argument for the retention of the churches is this. The population of York, like that of all other large cities, increases rapidly, and who knows but that in fifty years time, if these churches are preserved, they may be crowded with worshippers? and who knows but that there will be many amongst them who will then thank us for the determined stand we have made against their destruction?

Mr. S. W. North, York, moved an amendment, "That this meeting has confidence in His Grace the Archbishop of York and the committee associated with him." Speaking as a member of the committee, he reciprocated to the fullest extent the sympathy for the ancient monuments which had been expressed from the platform. The congregations of certain parishes were so small that it was quite impossible to find congregations for the churches. They were bound also to provide for the minister's decent support, and the livings were such as barely provided sustenance for the ministers. He believed that the proposals of the committee were fraught with the very best intentions. It had never yet gone forth that any one of the churches would be destroyed, nor had such an intention ever entered into the minds of the committee.

Mr. W. W. Hargrove, York, a member of the committee, seconded the amendment, and said that neither in the circular calling the meeting to consider the requirements of the York parishes, nor at the meeting itself, was one single word uttered by the Archbishop of York on the subject of the removal of churches.

Mr. Wm. Chapman (York), Mr. Cobden Sanderson, Dr. Tempest Anderson (York), and the Rev. Newton Maut, supported the resolution.

The amendment, on being put to the meeting, was lost by a large majority, and the original motion adopted with three dissentients.

### ST. MICHAEL'S, COVENTRY.

A MEETING of the General Committee for the Restoration of St. Michael's Church and Steeple, Coventry, was held at St. Mary's Hall last week.

A member of the Committee moved that Mr. Thompson's tender for certain sections of the work be accepted as follows:—I. The tower and lantern stage (without internal restoration), 15,980*l.*; IA. The interior of the tower, groining, and floor over it, 1,398*l.*; II. The spire, including the rebuilding of the upper part, lightning conductor, &c., 1,262*l.*; total of tower and spire, 18,640*l.*; III. The nave roof, clerestory, and parapets, 4,308*l.*; IV. The chancel and apse, with the aisles to apse, 3,355*l.*; total, 28,303*l.* It was stated that when the work was in progress they would be able to examine the core of the walls of the tower, and to ascertain if they would be strong enough to support the bells.

Mr. J. O. Scott, the architect, in reply to whether he did not think it possible he could make the tower sufficiently strong to carry the bells with safety, said the tower was very weak, and always was. It was never intended for a heavy peal of bells; the walls were very thin for a tower of such a size.

The Mayor seconded the resolution, with the exception that the groined roof and floor in the tower should not be proceeded with without the express order of the Committee, and in that form it was carried.

It was also resolved to insure the church for 20,000*l.* and the tower and spire for 20,000*l.*, and to allow a margin of 1,000*l.* for contingencies at the architect's discretion.

### BIRMINGHAM ARCHITECTURAL ASSOCIATION.

ON Saturday last the members of the above Association paid a visit to the New Liberal Club, now in course of erection in Edmund Street. Amongst those present were Messrs. J. Cossins, W. H. Kendrick (vice-president), Victor Scruton (hon. sec.), A. Hale, F. Bailey, T. Newton, O. Essex, H. H. McConnal, C. E. Bateman, A. J. Craddock, J. Goodman, W. Midgeley, &c. Before inspecting the building Mr. Cossins conducted the members to the Clerk of Works Office, where a thorough inspection was made of the plans, sections, and elevations of the club. The arrangement and disposition of the various departments were fully discussed, and much interest was shown in a novel device, in case of fire, consisting of an iron handrail ladder, running externally from the top of the building to the bottom. Under the guidance of Mr. Cossins,

the members then visited the whole of the building, commencing with the basement and working upwards to the culinary department and tower. After descending, and congratulating Mr. Cossins upon his very successful design, the members dispersed.

### LIVERPOOL ARCHITECTURAL SOCIETY.

THE first meeting of the recently inaugurated Junior Debating Club, membership of which is free to all professional non-practising members—i.e., assistants and students only—of the society, was held on the evening of the 1st inst. at the society's rooms, No. 9 Cook Street, when Mr. Walter H. Brierley read a paper entitled "Pitfalls," detailing many of the errors to which the young practitioner is liable, and showing how they may be avoided. Mr. James Nicholson was voted chairman for the evening. There was a good attendance, and an interesting discussion followed, participated in by Messrs. J. B. Hikins, E. Percy Hinds, Richard Holt, C. J. Andersson, Charles R. Chidson, W. N. Stephenson, Thomas J. Dalziel (visitor), G. Hornblower, and the chairman. The next meeting will be held on June 15, when a paper will be read by Mr. T. J. Dalziel on "Early Gothic Vaulting."

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### THE BUILDING ACCOUNTS OF THE GREAT HALL AT HAMPTON COURT.

IN the course of the present season there will be many a visit paid to Hampton Court, the building which of all others about London has most attraction for Parisians, since it appears to them to be an English version of Versailles. It is commonly believed that the more ancient parts of the palace were raised by Cardinal Wolsey on the ground which had been assigned to him by the Knights Hospitallers, and that the complete building was handed over to King Henry VIII. as a gift. But with the great hall, which forms so important a feature in the building, Wolsey had nothing to do, for the foundations were not laid until 1531, whereas the cardinal made over possession to the king in 1525. In the ample description by Cavendish of the banquet which was given to the French nobles by Wolsey there is no mention of a large hall, and the tables were laid in "the first waiting chamber" and "the chamber of presence." When painters represent the cardinal as sitting in state in the existing hall, they commit an anachronism. The accounts for the building of the new hall have been preserved, and the following extracts from them will suggest how books were kept in those days as well as the prices paid for labour and materials:—

#### *Taking Down Old Hall.*

Three sawers of tymber (by taske) for the new scalfalde to take downe the olde hall at 12*d.* every hundred foot. 16 Oct., Anno 22.

Carpenters makynge of a framyd scaffold to take down the rouff of the olde hall, every of them at 6*d.* the day.

Payd to Thomas Ward for his wages, by the space of 24 workynge daies, makynge of hodds and helpynge the scaffold maker to make long barrowes, whele barrowes, and ladders for the said works, 8*s.*

Tylers takynge down and sortynge of tyles of the old hall at 8*d.*, some 6*d.*, and some 5*d.* the day.

Payd to Hugh Diker, tiler, for his wages helpynge to taken down tiles and to uncover the olde hall, by the space of 4 daies, at 6*d.* the day.

Laborers helpynge to take down the olde hall 4*d.* the day.

Warden and setters takynge down of the freeston of the olde hall, 3*s.* 8*d.* the week, each of them.

Carpenters helpynge to take down the olde hall, and sortynge of the tymber of the rouff of the same at 8*d.*, some 6*d.*, and some 4*d.* the day.

#### *Tools and Materials required for Erection of New Hall.*

Empcyon of mattocks for to dygge the foundacyons of the new hall. Anno 22.

Empcyon of scaffold polls for to make the scaffold for the new hall, at 6*d.* the lod: also of great longe oken and alder polls, at 2*s.* 6*d.* the lode.

Payd to William Love, of Bronxam, for 10,000 of bryke, at 4*s.* 6*d.* the thowsande, of him bowght and delyvered at Taplow quarry.

Carters carrying of briks from the brik-kill, and also chalke



from the water side to the foundations of the hall, at 14*d.* the day.

Paid Henry Burde, of Kyngston, for a new cowle for the mortar pytt, 12*d.*

Item, for a scope for the same, 4*d.*

Item, for mending and repaying of the old cowle, a new bottom, 6 hopes and 2 eyrs, 10*d.*

Fifty-two lodes 4 quarters 6 boshells of lyme, reddy burnyd and delyveryd at Taplow quarre, at 10*d.* the quarter.

Chalke at 2*d.* the lode.

Payd to John Norse, merchaunt of Rone, for 4 mounghte of plaister of Paryshe, of him bought and delyvered at the Toure wharf, at 6*s.* the mounghte.

Rygate stone, at 4*s.* 2*d.* the ton.

Payd to Thomas Yerley of Kyngston, for two handropes to rere the rouff of the New Hall, pondering, 29 lb. at 2*d.* the lb.

Six crowys of irne, serving to raise the rouff of the New Hall, pondering, 104 lb. at 1½*d.* per lb. Thirteen pynns serving to joyne the ruff together of the New Hall, pondering, 46 lb. at 1½*d.* per lb.

#### *Bricklayers, Masons, and Carpenters.*

Bricklayers working in and upon the foundations of the New Hall, every of them at 6*d.* the day.

Free masons, at 3*s.* the weke, every of them working in freston upon dores, wyndowes, coyenes for buttresses, and gresse tables for the Kynges New Hall.

Carpenters working upon the flowres of the said Hall, every of them at 6*d.* the day. In March, anno 23.

Carpenters for working in their howre tymys and drynkyng tymys upon the Hall rought for the hasty expedition of the same—every of them rated for every 9 hours 7*d.* in all emongs them. Joyners were paid at the same price. In May, anno 24.

#### *Masonry.*

Payd to John Ells of Wesmyster, fremason, for makyng and intayling of two bullins in freston standing in the woghte of the great baywyndow in the Kynges New Hall, at 10*s.* the pece.

Payd to John Whighte, of Wynchester, fre mason, for workyng, karvyng, and gravyng, and intaylling yn fre ston of 6 bokkets for 3 dores of the New Hall, whereof 2 stond upon the northe syde and oon on the southe syde of the sayd Hall, by a bargin in taske, 6*l.*

Payd to John Wright, of Southe Memys, fre mason, for workyng, karvyng, and intaylling of 16 severalle fre stones for the reprints of the Kynges New Hall, whereof two of them curiously engraved wyth the Kynges armes, wyth the crowne, and two of the Kynges best stande at the upper ende of the sayd Hall, and ten other of the sayd stones ingravd, five of them wyth roses, and other five wyth portocolos, every of them wyth two of the Kynges beasts counteryng one agenst an other, stand on ether syde of the sayd Hall, and other rest of the sayd 16 stones ingravd with the letters H and R; every of them wyth the crowne stand in the four anguls of the same Hall, takeing for every of the sayd stones soo brought, clensyd, and fully fynyshe, by convensyon, 22*s.* 6*d.*

Payd to John Wright, free mason, for the workyng and makyng of a lyon and a dragon in ston, standing at the gabyll ends of the Kynges New Hall, at 16*s.* the pece.

Also payd to the same John, for the workyng and makyng of 16 beest in freston, standing upon the crest at both the gabull ends of the said Hall, at 5*s.* 4*d.* the pece.

Payd to Thomas Johnson, of London, karver, for makyng of 29 of the Kynges bestes to stand upon the newe batilments of the Kynges New Hall, and upon the femerell of the said Hall, taking for every of them so made and set up, 16*s.* 8*d.*

#### *Carving.*

Payd to Richard Rydge, of London, karver, for the makyng of three pendentts hangyng upon the femerall of the Kynges New Haull reddy feneshyd and set up, at 40*s.* the pece.

Payd to Richard Rydge, of London, karver, for cutting and karvyng of a rose crowynd standing in the crowne vought of the femerall of the Hall, 13*s.* 4*d.*

Also payd to Richard Rydge, of London, karver, for the makyng of 16 pendaunts standing under the hammer-beam in the King's New Hall, at 3*s.* 4*d.* the pece.

Payd to Richard Rydge, of London, kerver, for the makyng of 28 pendaunts stondyng in the crosse mowntyn above the hamer beame in the Kynges New Haull, at 25*s.* a pece.

Payd to William Baldwyn, for lyke couttyng of 12 traylls standing above the hamer beame in the Hall, at 12*d.*

Payde to Mychell Joyner, for couttyng of 26 spandrells standing in the plum basys under the nether purloyns in the Kynges New Hall, at 20*d.* the pece.

Payd to Richard Rydge, of London, carver, for cutting and carving of 32 lintells wrought with the King's badges and the Queen's standing in the screens within the King's New Hall, 2*s.* 2*d.* the pece.

Payd to Richard Rydge, of London, kerver, for the makyng of 28 hedds, standing upon the fote of the arche over the syde

of hathemmerbeam, within the Kynges new hall, at 12*d.* the pece.

Payd to Mychell Joyner, for the makyng of 250 of the Kynges and Quenys badges, standing upon the caters within the said hall, at 5*d.* the pece.

Payd to the forsaid Richard Rydge, for the makyng of 20 pendaunts, standing in the upper purloyns within the Kynges new hall, at 25*s.* the pece.

Payd to Thomas Johnson, of London, karver, for the makyng of 26 spandrells, to stand upon the reprice under the hammer-beame within the Kynges new hall, at 40*s.* the pece.

Also payd to Ric. Rydge, of London, karver, for karvyng and couttyng of 2 grewhondes, oon lybert, serving to stande upon the typpis of the vycys abowght the Kynges new haull, at 18*s.* 4*d.* the pece, by convention.

#### *Ironwork.*

Payd to John à Guylders, smythe, for eight score and 10 lokketts, 25 stay barres, and 83 standards, serving for the lower traunsome wyndows of the new hall, pondering 28 cwt. 92 lb., every cwt. conteyning 112 lb., at 1½*d.* the lb.

John à Guylders, smythe, for 6 payre and oon odde hooke of ston hooks, serving for the new hall, at 1½*d.* the lb.

Payd to John à Guylders, smythe, for two payre of ston hooks, serving the two vysis at the west ende of the kynges new hall, at 1½*d.* per lb.

Payd to William Johnson, for 26 great pyller for the chaptrell of the bossell of the hall, at 13*d.* the fote.

Payd to John à Guylders, smythe, for 40 fodletts for the harnesyng of the great window at the est ende of the haull, and 12 lyke fodletts for two lyghts over the said wyndow, pondryng 33 lb., at 1½*d.* per lb.

Also, for two pynns of irne, for stayes for the two bests of freston, standing at the gabylls ends of the haull, pondering two lb., at 1½*d.* per lb.

To John à Gwylders, smethe, for the great pryncypall vane baryng the close crowne, upon the femerall of the Kynges new haull, 40*s.*

Payd to John à Guylders, for 16 vanys for the bestes, standing upon the battylment of the hall, at 4*s.* the pece.

Payd to the same for 16 standards, 6 staybars, and 32 locketts, serving for the great bay wyndow in the southe syde of the Kynges new hall, at 1½*d.* per lb.

Also, payd to John à Gwylders, for a payre of ston henges, serving the dore at the vyce fote goyng up to the batylmentes of the haull, pondryng 14 lb., at 1½*d.* per lb.

Also, payd to John à Gwylders, for 2 pair of stone henges, oon payre serving the store-yerde dore, by the serving place, the other serving a dore under the haull place stayre, pondering 27 lb., at 1½*d.* the lb.

Item, to John à Gwylders, for 3800 of myddyll brodds, at 12*d.* the hundreth, spent upon the croke and dubbers in the kyngs new haull.

Payde for 250 of great brodds for the jowl-pesys in the sayd haull, at 2*s.* the 100.

Two thousand twopenny nails at 10*d.* the 1000, for the selyn bourde in the upper rouff in the hall.

Two hundred of great broddes for the skrenys in the Kinges new haull, price, the hundred, 23*s.* 4*d.*

Payde to Raynalde Warde, of Budley, for 7350 of dubbyll tenpenny nayles inglys, at 11*s.* the 1000. Also, 2000 of synggle tenpenny nayles, at 5*s.* 8*d.* the 1000. Also, 12,000 of sixpenny nayles, at 3*s.* 6*d.* the 1000. Also, 5000 of fivepenny nayles, at 2*s.* 10*d.* the 1000. Also 4000 of fourpenny nayles, at 2*s.* 4*d.* the 1000. Also 1500 of rought nayles, at 10*d.* the 1000.

(To be continued.)



#### **The Architectural Association.**

SIR,—The adjournment of the debate upon the question of doubling the subscription to the Association gives me the chance of writing what I meant to say had I been present at the meeting.

If the resolution be passed I hope it may effect all the good its authors anticipate. If, however, the criterion be the greatest good to the greatest number, I fear that the contemplated change will diminish rather than extend the usefulness of the Association. Double the subscription, and you at once weed out of its ranks the poorer students, who must need study proportion in money matters, though they may fail to find it in the architectural designs they spend their days in tracing. That the bounds of this useful society should be thus narrowed by the exclusion of the poorer student would be a matter for sincere regret; and the change would be all the more significant and regrettable coming at a time when, in another realm



of art, the College of Music is opening wide its doors to the poorest lad or girl in the land who has musical genius. It is well, I think, that this side of the question should be considered, even if great gains are expected from the change in other ways.

If, indeed, the sum of 300*l.* (which I understand is the sum it is hoped to raise by means of the increased annual subscription) be so necessary to the effectual working of the Association classes, why not get the Institute to make a yearly grant of this sum, and leave the subscription at its present figure? The ample funds of the Institute are at present mostly expended in guarding the rights and decencies of the profession; but this scarcely fulfils all that His Britannic Majesty expected of it when he granted its charter expressly for the advancement of art. Here, then, is a way in which the Institute can advance the study of architecture and at the same time do something to redeem its name.

And it seems to me the bounden duty of the Institute to help this school of young architects in some such practical way as I have indicated. Is it not written in the articles which bind the pupil to the service of the F.R.I.B.A. that the indulgent master shall allow the pupil "all reasonable facilities for attending classes of the Architectural Association or other kindred institutions"? Why, then, should not the Fellows of the Institute contribute (at least indirectly) to the sustenance of an excellent but needy educational society which gives to their pupils that knowledge of architecture they themselves are continually paid good round sums to teach?

JOHN D. SEDDING.

### SCHOOL BUILDINGS.

**Kidderminster.**—A new school for girls has been opened. The school is in immediate proximity to the church of St. John's, and is a plain building in the Early Lancet style, built of brick, with tiled roof. It is well arranged internally, the main room and class-room being convertible, when so required, into one large room for parochial purposes. The building has been erected by Mr. H. Smith, from the plans of Mr. J. T. Meredith, and accommodation is afforded for 357 girls.

**Birchfield.**—The foundation-stone of a Congregational Sunday School and Lecture Hall at Westminster Road, Birchfield, has been laid. The building, which is to cost about 1,200*l.*, has been designed by Messrs. Ingall & Hughes, of Temple Row West, Birmingham, and is being erected by Mr. W. Bennett, of Berners Street, Lozells. The style of architecture is Gothic, and the general appearance of the building is to harmonise very closely with that of the adjoining chapel.

**Todmorden.**—The corner-stones have been laid of a Primitive Methodist school at Knowlwood. The new school is being built on the site of the old structure, and has been designed by Mr. Jesse Horsfall, architect, of Todmorden and Rochdale. Mr. B. Lumb, of Todmorden, is the contractor, and the estimated cost is 1,200*l.*

### CHURCH BUILDING AND RESTORATION.

**Edinburgh.**—The demolition of the old Abercorn Free Church has been begun, and a new church is to be erected on the site. The new church is a parallelogram with octagonal end where the pulpit is placed, the front gable to the roadway being buttressed and terminated with a small belfry. The accommodation of the new church is about 400. The architect is Mr. Hippolyte J. Blanc, Edinburgh.

**West Kensington.**—A new Congregational church, designed in Early Gothic character, has been opened. The building on plan is cruciform, and has a massive central tower and a clerestory supported by flying buttresses. The roofs are of red tiles, and the walls of stone, lined inside with buff-coloured terra-cotta. The architect of the church is Mr. James Cubitt, with whom Mr. J. M. Brydon was for a short time associated. Messrs. Howell & Son, of Bristol, are the builders.

**Staithes.**—A new church, dedicated to "Our Lady the Star of the Sea," erected by the Catholics at Staithes Bank Top, has been formally opened by Dr. Lacy, Bishop of Middlesbrough. The church has been designed by Mr. Martin Carr, Middlesbrough, and the builder is Mr. Dickenson, of Saltburn. The style of architecture is Gothic, and the total cost is about 1,250*l.*

**Gedding.**—The old church has been restored and reopened. The work has been carried out by Mr. Robert Tooley, contractor, under the direction of Mr. E. F. Bisshopp, of Ipswich. A few months ago the nave was a ruin. The tiles had been mostly stripped off the roof, leaving the exposed timbers to decay, mortar from the walls and rubbish from the plastered ceiling lying in heaps among the ancient low oak benches and the modern high deal pews. The font, a large and handsome stone octagon, lay partly buried

in the brick floor, sadly disfigured with barbarous paint and neglectful carelessness. The triple chancel arch—a quaint and curious feature, resembling old Temple Bar with its needle-eye for pedestrians on either side of the main opening—had been deplorably mutilated, while the chancel itself was wretchedly mean-looking, with its weather-stained walls and shabby furniture, and the churchyard was as unsightly as the building in its midst.

### GENERAL.

**A Model** after Sir Frederick Leighton's well-known picture *Engaged* has been completed. The group is about three feet high, and will shortly be cast in bronze for the Fine Art Society.

**A Collection of Pictures**, valued at over 10,000*l.*, has been left to the town of Wednesbury, with 3,500*l.* towards the building of an art gallery and providing for the salary of a curator, &c., by Mrs. Richards, Wood Green, widow of Mr. E. Richards, formerly a coachsmith, carrying on business at Wednesbury. The pictures number between 200 and 300, and among them are works by Sidney Cooper, R.A., Leader, A.R.A., Goodall, R.A., Henshaw, Syer, Birket Foster, Webb, Marcus Stone, A.R.A., H. Dawson, sen., A. Vickers, and other artists.

**Mr. Thomas Woolner, R.A.**, has completed for the Government of New South Wales bronze portrait busts of Lord Palmerston, Lord Russell, Lord Derby, Lord Beaconsfield, and Mr. Gladstone. These busts are to be placed in the Executive Council Chamber in Sydney.

**A Bust** or tablet is to be placed in Bristol Cathedral as a memorial of the late Mr. F. Fergus, who was so widely known as Hugh Conway.

**The Lord Lieutenant of Ireland** has written to the Mayor of Barrow-in-Furness intimating that if the necessary arrangements can be made he will be prepared to unveil the statue of the late Lord Frederick Cavendish, executed by Mr. Bruce Joy, to be erected in the Town Hall Square at Barrow during the present month.

**A New Oak Porch** has been added to Downe Church, Kent, at a cost of about 100*l.*, by Mr. Balding, builder, of Bromley, from the designs and under the superintendence of Mr. St. Pierre Harris, architect, of 1 Basinghall Street.

**The Sketching Club** of the Leeds and Yorkshire Architectural Society held their first monthly meeting on Monday evening, when sketches produced by the members during the last month were exhibited.

**The Collection** of sculptures from Pergamos, which is being gathered at Berlin, has just received a slab representing the death of a giant in the war between the gods and the giants.

**Mr. F. Whitmore**, formerly a pupil of the late Mr. R. M. Phipson, of Ipswich, and fifteen years Surveyor to the Chelmsford Local Board, has been appointed County Surveyor of West Suffolk. Among the candidates were Mr. H. N. Maynard, London; Mr. H. Miller, jun., C.E., Ipswich; and Mr. J. S. Moye, London.

**Sir E. C. Guinness**, Dublin, has contributed 50*l.* towards the forthcoming Artisans' Exhibition, with the intention that 25*l.* should be applied to providing prizes for the manufacture of Irish lace and carved wood, and the remaining 25*l.* to one general decoration of one building.

**At a Special Meeting** of the Incorporated Society of British Artists, on Tuesday evening, Mr. Mortimer L. Mompes was elected a member.

**St. Paul's Church**, Woodford Bridge, Essex, opened in 1854, was destroyed by fire on Monday.

**At a Meeting** of the Dublin Corporation on Monday, Mr. Freeman was re-elected City Architect.

**Mr. Arthur Pease, M.P.**, has promised to lay the foundation-stone of the new Temperance Mission Hall in Royal Road, Kennington Park, on Saturday next, at 4 P.M. Lady Brassey and Mrs. W. J. Armitage will also lay two tablet stones on the same day. The architect is Mr. Banister Fletcher, F.R.I.B.A. Tickets to admit to the ceremonies may be obtained on application to the architect, 29 New Bridge Street, Blackfriars; or to Mr. C. Zierenberg, St. James's Home for Female Inebriates, Kennington Park.

**An Old Roman Shield** has been found at Traismauer, in Lower Austria, some miles south-west of Vienna. A large portion of a votive shield of bronze was found among a great quantity of fragments of glass and earthenware. On the obverse is an eagle, and below it Jupiter in Roman war dress, with an axe in his raised right hand. On the reverse is a full moon, and below it a young Mars. It is conjectured that the shield belongs to the third century of our era.

**The Nottingham Corporation** have decided to purchase, at a cost of 141,000*l.*, a number of small unhealthy tenements in the centre of the town, and to erect upon the spot a hospital at a further expenditure of 26,000*l.*



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JUNE 6, 1885.

## TRADE NOTES.

ON Monday, June 8, an Exhibition of Domestic Appliances will be opened at the Parkes Museum of Hygiene. Mr. Fletcher, of Warrington, will supply the apparatus, and a series of lectures on "Cookery" will be given, illustrated by experiments.

THE whole of the rubbers and facing bricks used in the erection of Buchan Hill Mansion, Herefordshire, in memory of the late Dr. G. Foote. The subject represented is "Christ Healing the Sick." The work has been designed and executed by Mayer & Co.

A FOUR-LIGHT Munich window has lately been erected in the parish church of Kington, Herefordshire, in memory of the late Dr. G. Foote. The subject represented is "Christ Healing the Sick." The work has been designed and executed by Mayer & Co.

MR. JOHN JONES, of Walker's Croft, Manchester, has received instructions to supply the whole of the wrought-iron window casements for the following buildings:—Deaf and Dumb Schools, Old Trafford; Wilton Hotel, Manchester; Wesleyan Schools, Stockport; and all brass casements throughout for Rainford Hall. The whole are to be fitted with improved handles and quadrants. Also all the internal fittings, pulpits, &c., for Slade Lane and Stretford Churches.

A HANDSOME stained-glass window, executed by Messrs. Heaton, Butler & Bayne, Garrick Street, London, has just been placed in the north transept of Sopley Church, Hampshire. The window consists of four lights, and the inscription is as follows:—"To the glory of God: a thankoffering from Lieutenant-General Sir George Willis, Knight of the Bath, of the Osmanieh of the Medjidi, Grand Officer of the Legion of Honour, &c., commanding the Southern Division, and Governor of Portsmouth, 1885."

## THE FORTH BRIDGE.

LAST week, on Friday, the Lord High Commissioner and the Countess of Aberdeen paid a visit to the Forth Bridge works at South Queensferry. On reaching the temporary station erected for the Forth Bridge workmen at South Queensferry, the visitors were received by Sir Thos. Tancred, Mr. Arrol, and Mr. Phillips, partners of the firm of Messrs. Tancred, Arrol & Co., contractors for the construction of the bridge. A large caisson, the sixth and last of the series required in connection with the bridge, was in readiness to be launched from its position at the south side of the Firth, and this ceremony the Countess deftly performed by cutting a rope fastened to a platform which had been erected for the occasion. Cheers were given by a large number of spectators as the huge, pipe-like structure glided successfully into the water. This caisson, which is similar in construction to the other five now in the

water, is intended as a support for the south-west pier at Inchgarvie. It is 70 feet in diameter at the base, and over 45 feet in height. In the operation of finally placing or sinking this structure the lower portion of the interior is filled with compressed air, supplied through a vertical central channel having valved openings. Into this lower chamber workmen, principally Italians, who do not feel the heavy air pressure so much as others, descend for the purpose of clearing the sea bottom, in order that the necessary depth may be reached, the density of the interior air being sufficient to prevent the inflow of water. The material excavated from the bottom by the men is raised to the surface by an interior central channel. One of the caissons now in position was loaded with no less than 3,600 tons of concrete.

## COMPETITIONS OPEN.

BOURNEMOUTH.—Aug. 19.—Designs are invited for the Construction of Two Marine Piers. Mr. G. R. Andrews, Town Surveyor, Bournemouth.

BRISTOL.—July 20.—Designs are invited for the Erection of Board Schools, Castle Green, for 1,000 children. Mr. Benjamin Wilson, Clerk to the School Board, Guildhall, Bristol.

NORTHFLEET.—June 23.—Plans are invited for the Erection of Schools to accommodate 200 Boys, 150 Girls, and 150 Infants. Mr. Fred. Mitchell, 49 Windmill Street, Gravesend.

LIVERPOOL.—Aug. 1.—Designs are invited for the Erection of Dwellings for the Labouring Classes. Mr. G. J. Atkinson, Town Clerk, Municipal Offices, Liverpool.

## CONTRACTS OPEN.

ABERDARE.—June 9.—For Erection of Pavilion, Offices, Fences, &c., for the Eisteddfod. Mr. J. R. Lewis, General Secretary, 11 Cannon Street, Aberdare.

AMBLE.—June 16.—For Erection of Co-operative Store Buildings. Messrs. Oliver & Leeson, Architects, Newcastle-on-Tyne.

ASHTON-UNDER-LYNE.—June 8.—For Building two Blocks of Houses. Messrs. T. D. & J. Lindley, Architects, Ashton-under-Lyne.

BANDON.—June 8.—For Construction of Water Works. Mr. James Price, C.E., 44 Harcourt Street, Dublin.

BARNARD CASTLE.—June 8.—For Cutting Trench and Laying Water Pipes (370 yards). Mr. George Carter, Surveyor.

BEESTON.—June 13.—For Rebuilding St. Mary's Church. Mr. C. H. Thornton, Architect, 3 Park Row, Leeds.

BEITH.—June 11.—For Construction of Additional Water Supply Works. Mr. W. R. Copland, C.E., 146 West Regent Street, Glasgow.

BILBAO.—June 26.—For Building Theatre. Messrs. Yves & Co., 24 Fenchurch Street, E.C.

BIRKENHEAD.—June 19.—For Building Purifying House at the Gasworks. Mr. T. O. Paterson, Gas Engineer, Birkenhead.

BISHOP AUCKLAND.—June 17.—For Construction of Passenger Station. Mr. William Bell, Architect, Railway Offices, Northgate, Darlington.

BOHERBOY.—June 11.—For Building Doctor's Residence, &c., and Dispensary. Mr. T. Guiney, Clerk to the Guardians, Kanturk, Ireland.

BOURNEMOUTH.—For Erection of Gervis Buildings. Mr. H. E. Hawker, Architect, 5 Town Hall Chambers, Bournemouth.

BRIGHOUSE.—June 16.—For Building Public Offices. Mr. John Lord, jun., Architect, Church Street, Brighouse.

BURY.—June 8.—For Building School at Fishpool. Messrs. Maxwell & Tuke, Architects, Bury.

CARDIFF.—June 12.—For Building Nurses' Bedrooms at the Workhouse. Messrs. James, Seward & Thomas, Architects, St. John's Square, Cardiff.

CARNFORTH.—June 12.—For Building Four Shops and Business Premises. Mr. S. Shaw, Architect, Kendal.

CHELSEA.—June 9.—For Construction of Disinfecting Station at Wharf No. 2. Mr. G. R. Strachan, Surveyor to the Vestry, Vestry Hall, King's Road, S.W.

CHESTERFIELD.—June 6.—For Alterations to Post Office. The Postmaster, Chesterfield.

DALCHOIRLICH.—June 10.—For Additions and Alterations to Farm Steading and Construction of Bridge over River Lyon. Messrs. Mackenzie, Innes & Logan, 23 Queen Street, Edinburgh.

DARTFORD.—June 6.—For Erection of Building to accommodate Staff, Engine-house, and Extension of Laundries, Long Reach. Messrs. H. Jarvis & Son, Architects, 29 Trinity Square.

DEVONPORT.—For Construction of Piers, Brick Arches, and Limestone Rubble Walls. Mr. John Willing, Secretary to the Devonport Gas and Coke Company, Keyham.

DOUGLAS WATER.—For Building Free Church and Manse. Mr. J. B. Wilson, Architect, 112 Bath Street, Glasgow.

DUBLIN.—June 10.—For Fog Bells and Lighthouse Machinery. Mr. Bindon B. Stoney, Engineer, North Wall, Dublin.

DUNDEE.—For Supplying Sets of Hoisting Apparatus and Machinery. Mr. R. F. Anderson, C.E., 84 Commercial Street, Dundee.

ECCLESHILL.—June 8.—For Building School. Mr. Wilson Bailey, Architect, 9 Market Street, Bradford.

EDINBURGH.—June 6.—For Construction of Wrought-iron Girder Gangway. Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

EDINBURGH.—June 20.—For Providing, Laying, &c., Fireclay Pipes for the Water Trustees. Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.



ELGIN.—June 8.—For Building Farm Steading at Easter Lawremeton. Mr. H. M. S. Mackay, C.E., 147 High Street, Elgin.

EXETER.—June 15.—For Altering and Enlarging Powhas Mills, Bonhay Road. Mr. J. Jerman, Architect, 33 Paul Street, Exeter.

GATESHEAD.—June 6.—For Building Additional Class-rooms at the Lady Vernon Schools. Messrs. Oliver & Leeson, Architects, Newcastle-on-Tyne.

GEDLING.—June 15.—For Building Pair of Semi-detached Villas. Mr. W. R. Radford, Architect, Pelham Chambers, Angel Row, Nottingham.

GLASGOW.—June 8.—For Building Improvements on Entrance to City Hall. The City Architect, 74 Hutcheson Street, Glasgow.

GLOUCESTER.—June 8.—For Supply of Fittings to Telegraph Office at the Docks. Mr. A. B. Mitford, Secretary, H.M. Office of Works, 12 Whitehall Place, S.W.

GRAMPOUND.—June 11.—For Execution of Works for Water Supply. Mr. William Andrew, Grampound.

HALIFAX.—June 6.—For Erection of Farm house and other Buildings, Exley Bank Top Messrs. Jackson & Fox, Architects, 22 George Street, Halifax.

HALIFAX.—June 17.—For Building Coachman's House, Stable, Harness, Coach-house, &c. Mr. James Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

HAMPTON WICK.—June 20.—For Building Board Schools, &c. Mr. R. T. Elsam, Hampton Wick.

HEBBURN QUAY.—June 13.—For Building Board School, Teacher's and Caretaker's Houses. Mr. G. Mason, Clerk to the School Board, Ellison Street, Jarrow.

HOMERTON.—June 23.—For Building Shelter Roof at the Eastern Ambulance Station, Brooksby Walk. Messrs. A. & E. Harston, Architects, 15 Leadenhall Street, E.C.

HOVE.—June 6.—For Erection of Ornamental Iron Fence (Designs and Tenders). Mr. C. A. Woolley, Town Clerk, Hove, Brighton.

KNOWLE, FAREHAM.—June 9.—For Building Group of Cottages at the County Asylum. Mr. James Robinson, County Architect, County Hall, Winchester.

LANGLEY MOOR.—For Building Presbytery. Mr. W. H. Wilson, Architect, Newcastle-on-Tyne.

LEYTONSTONE.—June 23.—For Building Six Girls' Houses at Schools. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

LIMERICK.—June 15.—For Building Club House, Wellesley Pier. Mr. M. Hunt, Architect, 46 Lombard Street West, Dublin.

LISCANNOR, CO. CLARE.—June 24.—For Building Coastguard Station. Office of Public Works, Dublin.

LIVERPOOL.—June 9.—For Provision of Accommodation for Emigrant Traffic, North Mersey. Plans at the Engineer's Office, Hunt's Bank, Manchester.

LONDON.—June 22.—For Supply of Furniture and Fittings for Extension of School Board Office. Mr. Bailey, Architect, School Board Offices, Victoria Embankment.

LUDDENDEN.—June 12.—For Building Two Houses. Mr. T. L. Patchett, Architect, George Street Chambers, Halifax.

LYNDHURST.—June 14.—For Building Lychgate to Burial Ground. Mr. S. Coxwell, Crown Buildings, Lyndhurst.

MAIDSTONE.—June 6.—For Laying 11,300 yards of 12-inch Cast-iron Socket and Spigot Pipes, 1,461 yards of 8-inch, and 2,268 yards of 6-inch. Messrs. E. Easton & Co., 11 Delahay Street, Westminster, S.W.

MERRINGTON.—June 6.—For Building Stone Wall, Cow-byre, Coalhouse, and Washhouse. Mr. J. Lee, Surveyor, Cradock Street, Bishop Auckland.

NAAS.—June 10.—For Building Kitchen at Workhouse Infirmary. Mr. E. Molloy, Clerk of the Union, Naas.

NAAS.—June 10.—For Works at Town Hall. Mr. J. T. Gough, Town Clerk, Naas.

NAVAN.—June 24.—For Building Labourers' Cottages. Mr. G. Lacy, Board of Guardians Room, Navan.

NORTHFLEET.—For Repairs to the Vicarage, The Vicar, Northfleet.

NORTH SHIELDS.—June 15.—For Construction of Timber Quays, River Wall, and Lifeboat House and Ways. Mr. C. Gomoszynski, Borough Engineer, 112 Norfolk Street, North Shields.

NOTTINGHAM.—For Building House. Mr. A. Goodall, Architect, Nottingham.

PLYMOUTH.—June 11.—For Construction of Service Reservoir, Settling Tanks, and other Works at Roborough, Bickleigh; and for the Excavation of Trench between Roborough and Knackersknowle. Mr. G. D. Bellamy, Borough and Water Engineer's Office, Plymouth.

PORTSMOUTH.—June 10.—For Erection of Large Wooden Building for use of Church Congress. Mr. George Rake, Honorary Architect, Ordnance Row, Portsea.

PRESTON JUNCTION.—June 9.—For Building Railway Station. Plans at the Engineer's Office, Hunt's Bank, Manchester.

ROCHDALE.—June 9.—For Erection of Clock Tower and parts of Town Hall. Mr. A. Waterhouse, A.R.A., 20 New Cavendish Street, W.

RUGBY.—June 17.—For Alterations and Additions to Premises for the Co-operative Society. Plans at 6 Lawford Gardens, Rugby.

SHEEPSCAR.—June 10.—For Building Church and Schools. Messrs. Adams & Kelly, Architects, Imperial Buildings, Leeds.

SOUTHEND.—June 2.—For Supply of Wrought-iron Unclimbable Fencing (24 tons), with Gates and Standards. Mr. Arthur Cayton, Surveyor, Alexandra Street, Southend.

ST. ASAPH.—June 10.—For Erection of Boiler-house, Scullery, Cornish Boiler, Steaming-pans, Drying-closet, Water-tank, &c., &c. Mr. Robert Jones, Union Workhouse, St. Asaph.

ST. DOGMAEL'S, CARDIGAN.—June 19.—For Building Drill Shed and Boat House, with Watch and Store Rooms over. The Director of Works Department, Admiralty, 71 Spring Gardens.

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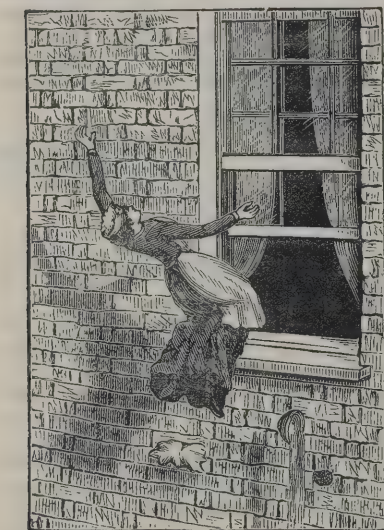
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Brook & Bruce, Albert Road, St. Phillip's.  
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Reading and 5 miles round  
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Evan Griffiths & George Finning, Sefton Works,  
Miles Street.  
J. Grosvenor, Ludlow.  
Parker Bros., Courtney Street.  
Henry Vickers, Welford Road.  
Driver & Co., St. Mary Saw Mills, Southampton.  
C. & W. Watson, Union Street.



**STOURBRIDGE.**—June 11.—For Construction of Works of Sewerage, Upper Swinford. Mr. W. Fiddian, Surveyor, 98 High Street, Stourbridge.

**SWINDON.**—June 6.—For Building Baptist Tabernacle and Schools. Mr. W. H. Read, Architect, Corn Exchange, Swindon.

**TOWCESTER.**—June 10.—For Alterations and Additions to Malt Houses. Messrs. H. Stopes & Co., Architects, 24A Southwark Street, S.E.

**TRELEWIS.**—June 8.—For Building Thirteen Cottages. Mr. J. Davies, Bontnewydd Board School, Treharris.

**ULVERSTON.**—June 15.—For Alterations and Additions to Conservative Club, Fountain Street. Mr. J. W. Grundy, Architect, Brogden Street, Ulverston.

**WALSALL.**—June 11.—For Building Fire-engine Shed, Bridge Street. Mr. J. R. Cooper, Town Clerk, Walsall.

**WELLINGTON.**—June 7.—For Building Bank Premises. Mr. E. T. Howard, Architect, North Street, Wellington, Somerset.

**WEST GRINSTEAD.**—For Making Addition to School Premises. Mr. Parrott, West Grinstead.

**WESTMINSTER.**—June 10.—For Repairs (External and Internal) to Baths and Laundry, Marshall Street and Dufour's Place, Golden Square. Specifications at the Vestry Hall, Piccadilly.

**WESTPORT.**—June 17.—For Works to Lecanvy Pier (Parapet, Paving, &c.). Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**WHITCHURCH.**—June 15.—For Building House. Mr. J. Hillary, Architect, Longparish, Hants.

**WHITEHAVEN.**—June 15.—For Works at various Farms. Mr. R. Allyne Robinson, Whitehaven Castle.

**WICKLOW.**—June 24.—For Construction of Pier in deep water, 200 feet long, with Sea Wall and Parapet, at Greystones, and Construction of Boat Slip. Mr. W. B. Soady, Office of Public Works, Dublin.

**WINDERMERE.**—June 6.—For Building Block of Warehouses, Stable, Carthouse and Bakery. Mr. Robert Walker, Architect, Windermere.

## TENDERS.

### ABERDEEN.

For Building Retaining and Fence Wall, with Pillars, Iron Railings, and Gateways, Font-hill Road, Aberdeen. Mr. WM. BOULTON, Surveyor.

BEATTIE (accepted) . . . £116 10 0

### ABERLOUR.

For Alterations and Additions to Benrines Distillery, Aberlour.

#### Accepted Tenders.

Kemp, Rinnachat, mason.  
Tough, Craigillachie, slater.  
Morrison, Dufftown, carpenter.

### BEDFORD.

For Works of Painting to Interior of Corn Exchange, Bedford. Mr. J. LUND, Borough Surveyor.

Partridge . . . £108 12 0  
Judge & Ball . . . 105 0 0  
CLARKE (accepted) . . . 99 15 6

### BINGLEY.

For Building Six Cottages, Church Street, Bingley. Mr. JOHN HAGGAS, Architect, North Street, Keighley.

#### Accepted Tenders.

Foster, mason  
Atkinson, joiner  
Thornton, slater  
Spurr, plasterer  
Bolton, plumber

### BIRCHINGTON.

For Building Concrete Sea Wall (600 feet). Mr. W. LANGTON COKE, C.E., Birchington, Thanet.

Jackson, Westminster . . . £1,074 0 0  
Frostick, Westgate-on-Sea . . . 932 0 0  
Engineer's estimate . . . 863 0 0

### BOURNEMOUTH.

For New Kitchen Offices to "The Wick," Branksome Park, Bournemouth. Mr. H. E. HAWKER, Architect, 5 Town Hall Chambers, Bournemouth.

HOARE BROS., & WALDEN (accepted) . . . £634 0 0

For Additions to "The Grove." Mr. H. E. HAWKER, Architect, 5 Town Hall Chambers, Bournemouth.

GEORGE (accepted) . . . £250 0 0

For Building Wesleyan Chapel, School, &c., Bournemouth. Mr. ROBERT CURWEN, M.R.I.B.A., Architect, 168-9 Palmerston Buildings, E.C. Quantities by Mr. J. S. Alder.

Smith . . . £9,172 8 3  
George . . . 9,000 0 0  
Minty . . . 8,537 17 0  
Lawson & Donkin . . . 8,485 0 0  
James . . . 8,317 0 0  
Cohen . . . 8,275 12 6  
White . . . 8,241 10 0  
Bevan . . . 8,207 7 10  
McWilliam & Son . . . 8,067 0 0  
Jones & Co. . . . 7,980 0 0  
Lucas & Cosser . . . 7,950 4 3  
Hoare Bros. & Walden . . . 7,883 15 0  
Jenkins & Son . . . 7,758 0 0  
Harris & Wardrop . . . 7,757 0 0  
Crook . . . 7,205 0 0  
Abbey & Co. . . . 7,195 0 0  
HOWELL & SON (accepted) . . . 7,115 0 0

#### Excavations.

Lawson & Donkin . . . £279 0 0  
McWilliam & Son . . . 261 0 0  
Perkins . . . { 6 weeks 254 0 0  
                              2 months 233 0 0  
Jenkins & Son . . . 240 0 0  
Saunders & White . . . 230 0 0  
MINTY (accepted) . . . 215 10 0

### BRAINTREE.

For Alterations and Additions at the Union Workhouse, Braintree. Mr. CHARLES PERTWEE, Architect, Bank Chambers, Chelmsford.

LEITCH, Braintree (accepted) . . . £668 0 0

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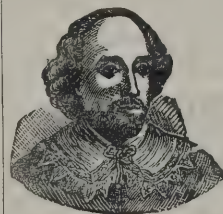
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**BROMLEY.**

For Additions, Alterations, and Repairs to No. 21 Bromley Common. Mr. ST. PIERRE HARRIS, Architect and Surveyor, 1 Basinghall Street, E.C.  
 Sikes & Son . . . . . £336 0 0  
 TAYLOR & SON (accepted) . . . . . 295 0 0

**CARDIFF.**

For Building Two Houses in Quadrant Row, Dinas Powis. Mr. S. W. RICHARDS, Architect, Herbert Chambers, Cardiff.  
 EVANS (accepted).

For Forming and Sewering Joint Streets on the Craddock Wells Senior Charity Estate, Cardiff. Messrs. BLESSLEY & ASPINALL, Surveyors to the Governors.  
 ALLAN (accepted) . . . . . £1,356 6 6

For Sewering and Forming Carriageways, Plas-Turton Estate, Canton, Cardiff, for the Marquis of Bute. Mr. E. W. M. CORBETT, Surveyor.  
 Allan . . . . . £3,659 7 6  
 Day . . . . . 3,610 0 0  
 Smith . . . . . 3,348 9 4  
 Pearson . . . . . 3,312 10 6  
 JEPSON BROS. (accepted) . . . . . 2,962 11 6

**CLACTON-ON-SEA.**

For Alterations to the Imperial Hotel, Clacton-on-Sea, for Messrs. T. Daniell & Sons, West Bergholt. Mr. J. W. START, Architect, Colchester.  
 WILKINSON (accepted) . . . . . £102 5 0

**DURHAM.**

For Building Wing at Durham County Hospital. SANDERSON (accepted).

**FORDINGBRIDGE.**

For Alterations and Additions to Highfield, Fordingbridge, Hants, for the Executors of the late Mr. J. R. Neave. Mr. FRED. BATH, A.R.I.B.A., F.S.I., Architect, Crown Chambers, Salisbury, and 342 Strand, London, W.C.  
 Harris, Salisbury . . . . . £2,435 0 0  
 W. J. & C. S. YOUNG, Salisbury (accepted) . . . . . 2,325 0 0

**DARLINGTON.**

For Pump-house and Iron Tank, for Gasworks, Darlington.  
 Hope . . . . . £76 0 0  
 KITCHING (accepted) . . . . . 74 10 0

**FORFAR.**

For Alterations and Repairs to Steading and Dwelling-house at Hatton of Carse. Mr. W. T. FARQUHAR, Architect.

**Accepted Tenders.**

Carnegy & Martin, mason . . . . .  
 Milne, joiner . . . . .  
 Moffat, slater . . . . . £146 0 0  
 Doig, plasterer . . . . .  
 Keith, plumber . . . . .

**GRAVESEND.**

For Building Sailors' Home, adjoining the Custom House, Gravesend, for the Directors of the Sailors' Home, Well Street and Dock Street, London. Mr. JOHN HUDSON, Architect, 80 Leman Street, E. Quantities by Messrs. Franklin & Andrews.  
 Weston, London . . . . . £7,044 0 0  
 Archer, Gravesend . . . . . 6,762 0 0  
 Blake, Gravesend . . . . . 6,750 0 0  
 Little, London . . . . . 6,727 0 0  
 Tuffee, Gravesend . . . . . 6,688 0 0  
 Belham & Co., London . . . . . 6,591 0 0  
 Staines & Son, London . . . . . 6,572 0 0  
 Groome, Rowland & Co. . . . . 6,500 0 0  
 Dove Bros., London . . . . . 6,495 0 0  
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 Tarrant & Son, London . . . . . 6,242 0 0  
 Angood, London . . . . . 6,240 0 0  
 Kirk & Randall, Woolwich . . . . . 6,130 0 0  
 Bentley, Waltham Abbey . . . . . 6,122 0 0  
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 Proctor, Woolwich . . . . . 6,000 0 0  
 Parker, London . . . . . 5,898 0 0  
 Howell, London . . . . . 5,898 0 0  
 Priestley & Gurney, Hammer-smith . . . . . 5,814 0 0  
 J. & H. Cocks, London . . . . . 5,500 0 0  
 Kirk Bros., Addlestone . . . . . 5,379 0 0  
 NIGHTINGALE, Gravesend (accepted) . . . . . 5,370 10 0

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For Construction of Bridge across the West Haven, Great Grimsby. Mr. J. BUCHAN, Borough Surveyor.  
 Smith . . . . . £930 0 0  
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For Building Hotel at Beech Hill Park, for Mr. Chas. Jack. Mr. EDWIN T. HALL, F.R.I.B.A., Architect, 57 Moorgate Street, E.C. Quantities by Messrs. Evans & Deacon, 1 Adelaide Street, S.W.  
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**ROYAL INSTITUTE OF BRITISH ARCHITECTS.**—The Twelfth and final Ordinary Meeting of the Session will be held on Monday, the 8th instant, at Eight p.m., when the Royal Gold Medal will be formally presented to Dr. SCHLEIMANN, F.S.A., Honorary Corresponding Member (Athens); after which the annual distribution of medals and other prizes to students will take place. The portrait painted by Mr. Frank Holl, R.A., of Horace Jones, Past President, will be formally presented to the Institute on behalf of the subscribers. A Paper by T. M. RICKMAN, F.S.A., Associate, entitled, "Professional Lessons from a Boulder: a Plea for Geology as part of an Architect's Education," will afterwards be read by the author. At the close of the proceedings there will be a ballot for five Fellows and seventeen Associates, and an election of two Honorary Corresponding Members will take place, for particulars of which see the Journal of Proceedings issued to Members and Correspondents on the 21st ultimo.  
 J. MACVICAR ANDERSON, Hon. Secretary.  
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 Candidates for the Office of Honorary Architect must be Members (or be qualified to become Members) of the Royal Institute of British Architects.  
 Applications and Testimonials to be sent in, addressed to the Secretary-Superintendent, before Tuesday, the 16th June instant.  
 By Order. A. O'D. BARTHOLEWYNS, Secretary-Superintendent.  
 The Middlesex Hospital, June 2, 1885.

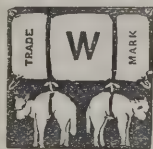
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"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

Yours, &c.

"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool, July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. C. Talbot, M.A., Withington Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 80 Duncan Terrace, City Road, London.

Works—TYLDESLEY, near MANCHESTER.



**HADLEY WOOD—continued.**

For Shops at Beech Hill Park, Hadley Wood, for Mr. C. Jack. Mr. EDWIN T. HALL, F.R.I.B.A., Architect, 57 Moorgate Street, E.C.

FOSTER & DICKSEE, Rugby (accepted) . . . £1818 0 0

**INCE.**

For Building Primitive Methodist Chapel, Ince. Mr. GEO. HEATON, Architect, Wigan. Quantities by the Architect.

France & Smith . . . £693 0 0  
Millington . . . 650 0 0  
Holmes . . . 630 0 0  
Wilson . . . 630 0 0  
Wigan . . . 628 0 0  
Winnard . . . 625 0 0  
Johnson . . . 624 0 0  
PRESTON (accepted) . . . 620 0 0

**IVY HATCH.**

For Stables and Lodge at Ivy Hatch, Kent, for Mr. C. G. Hale. Mr. EDWIN T. HALL, F.R.I.B.A., Architect, 57 Moorgate Street, E.C.

PUNNETT & SONS, Tonbridge (accepted) . . . £1,700 0 0

**KINGSBRIDGE.**

For Carrying out Drainage for the Towns of Kingsbridge and Doddbrooke and Portions of Parishes which abut, and for Laying Outfall Pipe along the Foreshore of the Estuary. Mr. W. LIDSTONE, Engineer, 5 Victoria Street, Westminster.

Sanders, Southampton . . . £3,684 0 0  
Botterill, London . . . 3,245 0 0  
J. & A. Steere, Aveton Gifford . . . 3,103 0 0  
Maddock, Saltash . . . 2,993 0 0  
Hawkings, Dawlish . . . 2,955 0 0  
Hawking & Best, Teignmouth . . . 2,909 5 0  
Beadle Bros., Erith . . . 2,901 0 0  
Rundle, Kingsbridge . . . 2,548 0 0  
Cowdery & Sons, Newent . . . 2,204 0 0

**LANCASTER.**

For Paving South Regent Street, Lancaster. Mr. A. CREER, Borough Surveyor. HARRISON (accepted) . . . £110 10 0

**IPSWICH.**

For Additions to Residence, Tower Street, Ipswich, for Mr. N. F. Gobbold. Mr. E. F. BISSHOPP, Architect and Diocesan Surveyor.

J. B. & F. BENNETT (accepted).

For New Porch to Oaklands, Ipswich, for Mr. Sterling Westhorp. Mr. E. F. BISSHOPP, Architect.

GIRLING (accepted).

Ebner, parquetry and mosaic work.

**LEAMINGTON.**

For Building the St. Nicholas Parish Room and Sunday Schools, Leamington. Mr. J. CUNDALL, A.R.I.B.A., Architect. Quantities by Messrs. Curtis & Sons.

Smith . . . £1,680 0 0  
Robbins . . . 1,473 0 0  
Cashmore . . . 1,450 0 0  
Fell . . . 1,438 0 0  
Bailey . . . 1,399 14 0  
Jones . . . 1,329 19 10  
Tallis . . . 1,290 0 0  
Architect's estimate . . . 1,400 0 0  
Heating Apparatus (Constantine) . . . 38 10 0

**LEEDS.**

For Additions and Re-furnishing Primitive Methodist Chapel, Leeds. Mr. T. HOWDILL, Architect, 40 Park Lane, Leeds.

Winterburn & Thackwray, brickwork.

Briggs & Bulmer, joiner.

Brook, slater.

Oldham, plumber.

Haddock, plasterer.

Derbank, painter.

Oldham, heating.

**LONDON.**

For Completion of Three Carcases, Bradbury Estate, Goose Green, for Mr. Morgan. Mr. EDWIN T. HALL, F.R.I.B.A., Architect to the Estate, 57 Moorgate Street, E.C.

Baney . . . £880 0 0  
Dawes . . . 850 0 0  
Robinson . . . 800 0 0  
PEARCE (accepted) . . . 753 0 0

**LONDON—continued.**

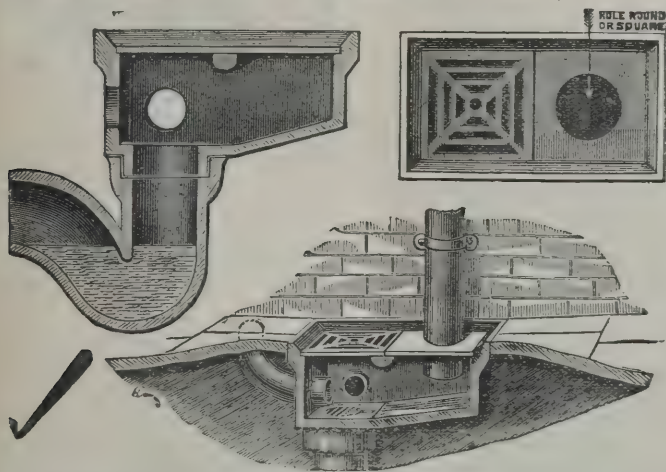
For Alterations and Additions at Villiers Street, Strand, for Messrs. Chaplin & Co. Mr. THOS. W. WILLIS, Architect, 34 Ely Place, Holborn. Quantities by Mr. C. Stanger, Surveyor, 21 Finsbury Pavement, E.C.

|                             |            | A        |
|-----------------------------|------------|----------|
| Wall . . .                  | £2,911 0 0 | £202 0 0 |
| Toten & Son . . .           | 2,800 0 0  | 190 0 0  |
| Laing . . .                 | 2,296 0 0  | 282 0 0  |
| Patman & Fotheringham . . . | 2,273 0 0  | 425 0 0  |
| King & Son . . .            | 2,187 0 0  | 314 0 0  |
| Williams & Co. . .          | 2,147 0 0  | 239 0 0  |
| Ashby & Horner . . .        | 2,137 0 0  | 240 0 0  |
| Colls & Sons . . .          | 2,125 0 0  | 235 0 0  |
| Patrick & Son . . .         | 2,092 0 0  | 223 0 0  |
| Taylor . . .                | 2,020 0 0  | 185 0 0  |

A. Extra if partitions in mahogany instead of deal.

For Building and Completion of the Police-station for the Fourth Division in the City of London. Mr. HORACE JONES, Architect. Messrs. R. C. CURTIS & SONS, Surveyors.

|                         |             |
|-------------------------|-------------|
| Webster . . .           | £14,142 0 0 |
| Johnson . . .           | 13,071 0 0  |
| Holland & Hammen . . .  | 12,958 0 0  |
| Conder . . .            | 12,495 0 0  |
| Rider . . .             | 12,448 0 0  |
| Ashby Bros. . .         | 12,370 0 0  |
| Trollope & Sons . . .   | 12,180 0 0  |
| Spencer . . .           | 12,168 0 0  |
| Nixon . . .             | 12,035 0 0  |
| Colls & Sons . . .      | 11,990 0 0  |
| Bywaters . . .          | 11,946 0 0  |
| Kilby & Gayford . . .   | 11,934 0 0  |
| Boyce . . .             | 11,890 0 0  |
| Mowlem . . .            | 11,884 0 0  |
| Hart . . .              | 11,784 0 0  |
| Gentry . . .            | 11,690 0 0  |
| Morter . . .            | 11,580 0 0  |
| Perry . . .             | 11,532 0 0  |
| Hall, Beddall & Co. . . | 11,494 0 0  |
| Greenwood . . .         | 11,230 0 0  |
| Chappell . . .          | 11,187 0 0  |

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This Gully possesses the following advantages:—

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Forms Drain for Area or Surface.

Ventilates the Pipes and Trap. Is easy of Access for Clearance.

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**VOLUME XXXII. OF THE ARCHITECT.**

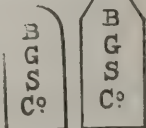
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**LONDON—continued.**

For Alterations to the Nell Gwynne, King's Road, Chelsea, for Mr. Cowlin. Mr. H. I. NEWTON, Architect, 17 Queen Anne's Gate, Westminster.

Gibbs & Flew . . . . . £355 0 0  
STEEL BROS., Dalston (accepted) . . . . . 285 0 0

For Roads and Sewers, Bradbury Estate, Goose Green, S.E., for Mr. W. F. Morgan. Mr. EDWIN T. HALL, F.R.I.B.A., Surveyor to the Estate, 57 Moorgate Street, E.C.

Blomfield . . . . . £614 0 0  
Lloyd . . . . . 557 0 0  
Harris . . . . . 539 0 0  
PEARCE (accepted) . . . . . 507 0 0

For Sundry Works at Brown's Wharf, Poplar, Middlesex, Building Examination-room for Patients, Erecting High Fences and Gates, Altering Pavings, Laying on Gas and Water Services, &c., for the Managers of the Metropolitan Asylum District. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities not supplied.

Ward & Lamble . . . . . £595 0 0  
Chafen . . . . . 550 0 0  
Holland . . . . . 527 0 0  
Limn . . . . . 511 0 0  
Johnson . . . . . 493 0 0  
PROCTOR, Wellington Street, Woolwich, S.E. (accepted) . . . . . 380 0 0

**MITCHAM.**

For the Erection of Gasworks at the Schools and Workhouse, Mitcham, for the Guardians of Holborn Union. Messrs. H. SAXON SNELL & SON, Architects, 22 Southampton Buildings, W.C.

May Bros. . . . . £5,827 0 0  
Williams & Co. . . . . 5,379 0 0  
Porter & Co. . . . . 5,120 0 0  
Cutler & Co. . . . . 4,995 0 0  
Fraser & Co. . . . . 4,976 0 0  
Pigott . . . . . 4,750 0 0  
Dempster & Co., London . . . . . 4,630 0 0  
Holmes & Co. . . . . 4,440 0 0  
East Surrey Iron Works . . . . . 4,425 0 0  
Ashford, Pease & Co. . . . . 4,049 0 0  
Dempster & Co., Manchester . . . . . 3,100 0 0

**MANCHESTER.**

For Fittings for Gymnasium at Blind Asylum, Manchester. Mr. C. HEATHCOTE, Architect.

J. WILSON, jun., Hulme (accepted) . . . . . £150 0 0

**MONTROSE.**

For Reconstruction of Inch Bridge, Montrose.

Brown, Montrose . . . . . £501 12 8  
ANDERSON, Dundee (accepted) . . . . . 389 6 8

**MOULSHAM.**

For Enlargement of National Schools, Moulsham. Mr. CHARLES PERTWEE, Architect, Bank Chambers, Chelmsford.

Potter & Lummis, Chelmsford . . . . . £1,123 10 0  
Roper, Chelmsford . . . . . 1,047 0 0  
Baker, Chelmsford . . . . . 1,030 0 0  
Choat & Son, Chelmsford . . . . . 1,030 0 0  
Fincham, Chelmsford . . . . . 1,024 0 0  
Gozzett, Woodham Walter . . . . . 935 0 0  
Saltmarsh, Chelmsford . . . . . 876 10 0  
Moss, Chelmsford . . . . . 876 0 0  
Wood, Chelmsford . . . . . 867 0 0  
CROMPTON & FAWKES, Chelmsford (accepted) . . . . . 864 0 0

**NEWCASTLE-ON-TYNE.**

For Extension of City Lunatic Asylum, Cologer. Mr. A. B. PLUMMER, Architect.

SCOTT (accepted) . . . . . £22,011 0 0

**NOTTINGHAM.**

For New Cattle Market for the Nottingham Corporation. Mr. ARTHUR BROWN, Assoc.M.Inst.C.E., Borough Engineer.

**Contract No. 1.**

For Abutments and Approaches to Bridge, General Formation, Sewering, and Leveling of Market.

J. & G. Tomlinson, Derby . . . . . £12,700 0 0  
Meats Bros., Nottingham . . . . . 11,500 0 0  
Hodson & Son, Nottingham . . . . . 11,287 0 0  
Vickers, Nottingham . . . . . 11,150 0 0  
Holmes, Shirland . . . . . 10,997 0 0  
Thump, Nottingham . . . . . 10,789 0 0  
Smart, Nottingham . . . . . 10,232 0 0  
FOSTER & BARRY, Nottingham (accepted) . . . . . 10,000 0 0

**NOTTINGHAM—continued.****Contract No. 2.**

For Two Entrance Lodges, Offices, and Refreshment Rooms, Unloading Platform, Cattle Docks, Pig Sheds, Cattle Lairs, &c.

Wartnaby . . . . . 8,700 0 0  
Hutchinson . . . . . 8,234 0 0  
Hockon & Sons . . . . . 8,104 0 0  
Foster & Barry . . . . . 7,900 0 0  
Hind . . . . . 7,877 0 0  
Vickers . . . . . 7,778 0 0  
Adams . . . . . 7,738 0 0  
Bott & Wright . . . . . 7,659 0 0  
Wheatley & Maule . . . . . 7,560 0 0  
Guy . . . . . 7,400 0 0  
BELL & SONS (accepted) . . . . . 7,668 0 0

**All of Nottingham.****Contract No. 3.**

For Ironwork to Bridge, Roofs, Pens, Stalls, Railings, Hurdles, &c.

Handyside & Co., Derby . . . . . £6,675 0 0  
White & Son, Nottingham . . . . . 6,442 0 0  
Braithwaite & Kirk, West Bromwich . . . . . 6,268 0 0  
Cowen & Co., Nottingham . . . . . 6,028 0 0  
Butterley & Co., Alfreton . . . . . 5,896 0 0  
Tidesley, Willenhall . . . . . 5,880 0 0  
Goddard & Massey, Nottingham . . . . . 5,841 0 0  
Abbott & Co., Newark . . . . . 5,800 0 0  
Fletcher, Wolverhampton . . . . . 5,530 0 0  
Newton, Chambers & Co., Sheffield . . . . . 5,451 0 0

E. C. & J. KEAY, West Bromwich (accepted) . . . . . 5,020 0 0

Brookes & Co., Wolverhampton, tender not accepted.

Haynes & Co., Nottingham, tender withdrawn.

The amount of the three accepted tenders is 22,688*l.* The Borough Engineer's estimate was 25,425*l.*

**WEST BROMWICH.**

For Building New Institute, West Bromwich.

ROWBOTHAM, Birmingham (accepted) . . . . . £7,975 0 0

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.

# VENTILATION WITHOUT DRAUGHT SOLVED.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 63, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



**PETERBOROUGH.**

For Building House facing Burghley Square.  
Mr. H. M. TOWNSEND, Architect, The  
Precincts, Peterborough.  
Gray Bros., Peterborough . . . £589 10 0  
Rowe, Werrington . . . 550 0 0  
Wenlock, Peterborough . . . 485 0 0  
Wright, Peterborough . . . 469 10 0  
PITTO & IRESON, Yaxley (ac-  
cepted) . . . 438 5 0  
Proprietor finds bricks, slates, and carting.

**POOLE.**

For Gas and Water-fittings, Bell-hanging, &c.,  
at Two Villas, Seldown, Poole. Messrs.  
CURTIS & SONS, Architects, Market Street,  
Poole.  
Sharp . . . £127 0 0  
BACON & Co. (accepted) . . . 100 0 0

**PUDSEY.**

For Erection of Farm Buildings, Pudsey. Mr.  
JOWETT KENDALL, Architect, Idle. Quan-  
tities by the Architect.

*Accepted Tenders.*

Wood, Pudsey, mason . . . £650 0 0  
Mann, Stanningley, joiner . . . 180 0 0  
Bannister, Pudsey, plumber . . . 41 10 0  
Lee, Eccleshill, plasterer . . . 33 18 0  
T. & A. Thornton, Eccleshill,  
slaters . . . 38 10 0

Total . . . £943 18 0

**STRETHAM.**

For Building Wesleyan Chapel at Stretham,  
Ely. Mr. JOSIAH GUNTON, Architect,  
Guildhall Chambers, E.C. Quantities by  
the Architect.  
Mills, Cambridge . . . £1,062 0 0  
Saint & Son, St. Ives . . . 1,020 0 0  
Thoday . . . 1,015 0 0  
Kerridge & Shaw, Cambridge . . . 998 0 0  
Skeels & Son . . . 990 0 0  
Wilmott, Cambridge . . . 970 0 0  
Cowell, Soham . . . 929 0 0  
Waters & Feast . . . 899 7 0  
LOFTS & SON, Ely (accepted) . . . 895 0 0

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One Shilling each. Carriage paid on receipt of Fourteen Stamps.

DIRECTIONS.—Rub down Indian Ink, or any colour, in pure  
water, then add two or three drops of the Indelible Water to the  
consistency required; line in the drawing as usual, and let it  
stand until thoroughly dry. The drawing may be cleaned and  
coloured or even washed with sponge and water without fear of  
destroying the sharpness of the line.

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HUDDERSFIELD.

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plete sets of alphabets, plain, shaded, and ornamental; four sets  
of figures in various styles; and sixty of all the principal words  
used upon architectural drawings, including scales, points,  
corners, &c., in mahogany case, with brushes. Price complete, 30s.  
■ AG. BAKER, 22 Orpingley Road, Hornsey Road, London.

**SALISBURY.**

For Retiring-room, Lavatory, &c., at the  
Maundrel Memorial Hall, Salisbury. Mr.  
FRED BATH, A.R.I.B.A., F.S.I., Archi-  
tect, Crown Chambers, Salisbury, and  
342 Strand, London, W.C.  
W. J. & C. S. YOUNG, Salisbury (accepted).

For Cold Storage-room, Alterations and Addi-  
tions to Premises, Butcher Row and Canal,  
Salisbury, for Mr. W. J. Snook. Mr. FRED  
BATH, A.R.I.B.A., F.S.I., Architect, Crown  
Chambers, Salisbury, and 342 Strand,  
London, W.C.

DOLMAN, Salisbury (accepted).

For Indication Stones at the Fisherton Ceme-  
tery Extension, Salisbury, for the Fisherton  
Anger Burial Board. Mr. FRED BATH,  
A.R.I.B.A., F.S.I., Architect, Crown Cham-  
bers, Salisbury, and 342 Strand, London,  
W.C.

LILLY, Chilmark Quarries, Salisbury (accepted).

**STOCKTON-ON-TEES.**

For Paving Works, &c., Stockton. Mr. JAMES  
HALL, Borough Surveyor.

Heatley . . . £2,327 2 1  
ROBINSON (accepted) . . . 2,259 1 0

**TENBY.**

For Improvement Works, Tenby Corporation.

*Esplanade Steps.*

J. Davies . . . £46 10 0  
Beynan . . . 34 19 0  
D. DAVIES (accepted) . . . 26 9 0

*Penally Road.*

D. Davies . . . 47 0 0  
D. DAVIES (accepted) . . . 23 10 0

**TIPTON.**

For Painting and Cleaning Public Offices,  
Tipton. Mr. S. F. ROWLEY, Surveyor.

Higgins, Tipton . . . £68 0 0  
Brain, Princes End . . . 55 0 0  
Bunting, Tipton . . . 45 10 0  
BEEDLE, Tipton (accepted) . . . 39 10 0  
Surveyor's Estimate . . . 55 10 0

**UPPINGHAM.**

For Painting at Workhouse, Uppingham.  
Pearson . . . £34 15 0  
Beardsworth . . . 28 0 0  
Aris . . . 24 0 0  
Cliff . . . 21 19 3  
CHAPMAN (accepted) . . . 20 3 4

**WOOLWICH.**

For House and Shop in Beresford Square, Wool-  
wich, for Mr. G. Lawrence. Mr. H. H.  
CHURCH, Architect, William Street, Wool-  
wich.

Covil, Woolwich . . . £895 0 0  
Brown, Plumstead . . . 855 0 0  
Coombs, Plumstead . . . 850 0 0  
Fenn, Woolwich . . . 850 0 0  
Procter, Woolwich . . . 700 0 0  
Loneragan Bros., Plumstead . . . 683 0 0  
Walker, Limehouse . . . 656 0 0

**WRITTLE.**

For Rebuilding Writtle Chapel. Mr. CHARLES  
PERTWEE, Architect, Chelmsford.

Lemon, Ongar . . . £699 0 0  
Roper, Chelmsford . . . 662 0 0  
Avey, Ingatestone . . . 649 10 0  
Crompton & Fawkes, Chelmsford . . . 618 0 0  
Saltmarsh, Chelmsford . . . 610 0 0  
Gardner & Son, Coggeshall . . . 590 0 0  
Johnson, Chelmsford . . . 589 17 0  
Gozzett, Woodham Walter . . . 575 0 0  
Moss, Chelmsford . . . 565 0 0  
Farrow, Chelmsford . . . 480 0 0  
Wood, Chelmsford . . . 475 0 0  
Byatt . . . 459 0 0  
KENNELL, Writtle (accepted) . . . 432 5 0  
Potter & Lummis, Chelmsford . . . 410 0 0

**WROXTON.**

For Building Large Hovel and Yard at Wrox-  
ton.

J. & W. Walton . . . £76 12 0  
T. & J. Lambert . . . 71 0 0  
Carter . . . 67 7 0  
Adkins . . . 66 0 0  
Busby . . . 60 10 0  
Fenemore . . . 59 18 0  
GRANT (accepted) . . . 49 10 0

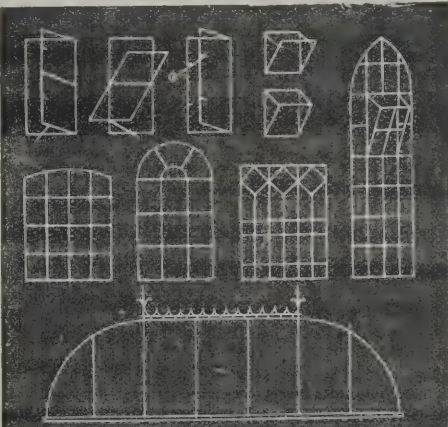
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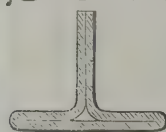
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|  | 228  | 0  | 0 |
|  | 260  | 2  | 0 |
|  | 144  | 0  | 0 |
|  | 215  | 0  | 0 |
|  | 120  | 0  | 0 |
|  | 218  | 0  | 0 |
|  | 127  | 14 | 0 |

**POWERS OF THE DEAN OF GUILD COURT.**

IN an appeal the Court of Session have decided that the Dean of Guild Court of the city of Edinburgh had jurisdiction within the regality of the Canongate, Edinburgh, and that the Dean of Guild had properly interfered to prevent the Edinburgh Gas-Light Company erecting new buildings on their own ground in the Canongate, without first having obtained a warrant from the Dean of Guild Court.

The Lord President gave the leading opinion, which was concurred in. He said:—The first of the two questions raised in this appeal was whether the Dean of Guild of the city of Edinburgh had jurisdiction within what was known as the regality of the Canongate, within which the works of the appellants were situated. He was willing to assume that prior to 1879 the Dean of Guild had no jurisdiction within the regality of the Canongate, and he thought the jurisdiction of the Dean of Guild in that district was conferred by the 124th section of the Act of 1879. The words were:—

“Such Court as so constituted shall possess and exercise within the burgh all the rights, powers, and privileges which are possessed and exercised by the existing Dean of Guild Court by law and usage within the limits of its present jurisdiction.”

Now, according to the contention of the appellants, the “limits of its present jurisdiction” were the burgh of Edinburgh as extended by the various Extension Acts, but not the regality of the Canongate. The term “burgh” was defined by the interpretation clause to mean the whole burgh within the police boundaries, and it was admitted, in point of fact, that the regality of the Canongate was within the police boundaries of the city of Edinburgh. With that light how did they construe that clause? The Court was to possess and exercise within the police boundaries of the city of Edinburgh all the powers, functions, and jurisdiction which were possessed and exercised by the Dean of Guild Court within the less extended limits of its present jurisdiction, which excluded the regality of the Canongate. Was there no extension of the jurisdiction then? and were there not two areas—an extended and a limited area, quite distinctly defined—one, according to the view of the appellants, excluding the regality of the Canongate, and the other including the whole burgh, meaning the whole area within the police boundaries of the city, which confessedly embraced the regality of the Canongate? It was impossible, therefore, to hold that the Dean of Guild had

no jurisdiction within the regality of the Canongate. The only other question was, whether the Gas-Light Company were entitled to go on under the powers of their Act of Parliament, to erect any building within their own ground without obtaining the usual warrant from the Dean of Guild Court. The statute which incorporated the Company undoubtedly gave them power to erect buildings from time to time. But every proprietor within the burgh had a right to erect buildings on his own ground subject to this, that he must, first of all, obtain a warrant from the Dean of Guild Court. He could see nothing in the power given to the Company which did not belong to other proprietors in Edinburgh. The Dean of Guild had, therefore, quite properly interfered to prevent the building in question going on until a proper warrant had been obtained.

**STONYHURST COLLEGE.**

THE extensive alterations and additions to this world-renowned Roman Catholic seminary, which were commenced nearly seven years ago, are now nearly completed, and its educational resources, for the improvement of which the enlargement was undertaken, are now felt to be quite adequate and efficient. When the alterations were projected, the college authorities found it necessary to make arrangements to pull down a considerable portion of the older part of the structure. The project involved enormous expenditure, but so many handsome offers of assistance were received, especially from old students, that the finances justified the commencement of operations sooner than was expected. The designs of Messrs. Dunn & Hansome, architects, of Newcastle-on-Tyne, which provided for 250 students, in addition to class and other rooms, were accepted, and the foundation-stone of the new portion of the college was laid on August 1, 1878, by Mr. Lomas, of Clayton Hall. The new south front of the college is 840 feet in length, including the returns, which join the centre block to the

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wings; and this, added to the church front, gives a total frontage of upwards of 900 feet from east to west. A cloister, 80 feet long, connects the church with the west wing. In the latter are four corridors, in as many storeys, on the north side of the building, each 136 feet long by 8 feet wide, and having nine large rooms opening upon it. There is a staircase at each end of the corridors, and the roof of the building is flat and covered with Claridge's asphalt, providing, as in other portions of the new building, a convenient promenade. On the basement floor of the east wing is a drawing-school, 40 feet by 39 feet, and 13 feet high, and a gymnasium and fencing-room of the same dimensions, with rooms for music masters and music practices. In this wing, on the ground-floor, are three playrooms of large dimensions, for 60, 80, and 60 pupils respectively, all furnished with billiard-tables, chess, draughts, and other indoor games, and the walls are covered with pictures and photographs. On this floor also are two reading-rooms, and a cloister 440 feet long runs from the playrooms past the chapel (not yet finished) towards the church, and there is a similar but loftier one on the floor above. The east return cloister is 103 feet in length. Two magnificent oak staircases give access to the dormitories, which are very spacious, providing from 1,000 to 1,500 cubic feet of air for each boy. The staircases are of solid oak, with carved handrails and balusters, the steps are 8 feet long and 14 inches broad, fitted with Hawksley's patent treads. Above the playrooms is the Academy Hall, which is floored with oak. It is 93½ feet long, 40 feet broad, and 23½ feet high, and is considered the finest room in the college. It has a stage projecting 40 feet from the floor, with a gallery for the boys at the opposite end, having thirteen rows of seats. The ceiling of this magnificent apartment is elaborately decorated in the style of the Elizabethan period, and the walls are enriched with plaster and panel work. The study hall, in the centre of the new building, on the same floor, is 90 feet long by 35 feet broad, and 22½ feet high, and it has a plain oak wainscoting 6 feet high. Each boy has a handsome little desk of

plain polished mahogany, standing apart from that of his neighbour, and the seat has the tenant's name inscribed on a brass plate. There are twelve class-rooms right and left of the study hall, and the corridor giving access to them and the hall is 327 feet long, 14 feet wide, and 15½ feet high. The chapel will be in the ornate Perpendicular style, the gurgoyles Gothic, and the other details of the Queen Anne period. The height of the two central turrets of the new building is 110 feet 6 inches, including the nave (about 10 feet), whereas the two old Italian cupola towers of the west front are only 99 feet from the ground to the eagles, but they stand on an elevation 5 feet higher. With the exception of the chapel and some of the lavatories the whole work has been accomplished, and the structure now presents a noble and imposing aspect. The total cost of the alterations and additions has been estimated at from 100,000£. to 150,000£.

### MANCHESTER SHIP CANAL.

ON Tuesday Liverpool relieved itself of the charge of apathy regarding the proposed Manchester Ship Canal. The large meeting of the Chamber of Commerce in the Cotton Association's large room, and the unanimity of opinion there expressed afforded ample proof, says the *Journal of Commerce*, that Liverpool is alive to the importance of stopping a scheme which it was declared would turn out to be as great a disappointment as the South Sea Bubble. The President of the Chamber, Mr. E. Smith, dealt with the subject in a comprehensive manner, and his piquant arguments and his well-collated facts afforded a great amount of information. The president moved the adoption of the memorial, which had been prepared with much care and ability by Mr. Coke, and he adduced evidence showing the great necessity for the Chamber to oppose the Canal Bill before the House of Commons Committee. The passing of the measure might result in damage to the port of Liverpool which, once suffered to occur, could never be repaired.

He very easily disposed of the argument that the canal would cheapen freights, and from a commercial point of view he showed that the calculations laid before the Lords were altogether unreliable, and in some instances ridiculous. One specimen may be given. The promoters of the canal expected that the traffic on the waterway would amount to 9,469,000 tons, and yet the whole of the traffic from Liverpool by canal, rail or road only amounted to 9,864,000 tons. The exposure of this ridiculous evidence very naturally provoked considerable amusement. Mr. Coke supplemented the president's remarks by a forcible speech in seconding the motion. He explained the conditions under which the chairman of the Dock Board and Sir W. B. Forwood stated that Liverpool opposition to the Canal Bill might be withdrawn. Those conditions had not been observed in the measure now before Parliament. On the contrary, the Bill asked for such powers of interference with the estuary that the granting of them might bring about the destruction of the port of Liverpool. The memorial was then unanimously adopted, after which a resolution was proposed empowering the council of the Chamber to oppose the Bill and to call evidence. Sir W. B. Forwood, in seconding the motion, accounted for the apathy which had prevailed to the belief among the citizens that there was no probability of the scheme being sanctioned. He thought it was a great mistake for the people to have become impressed with the idea that the canal would not be made. If Parliament permitted dividends to be paid whilst the canal was in course of construction, the money would be, in a large measure, subscribed by small tradesmen in the country, and they would eventually learn that they had been supporting the greatest Bubble they had known since the South Sea bubble. The loss would fall on the poorer portion of the community. They did not find the men of light and leading in Manchester lending themselves to the scheme, for they knew that it could not be a permanent benefit to that city, but that it might do serious damage, not only to it, but to the port of Liver-

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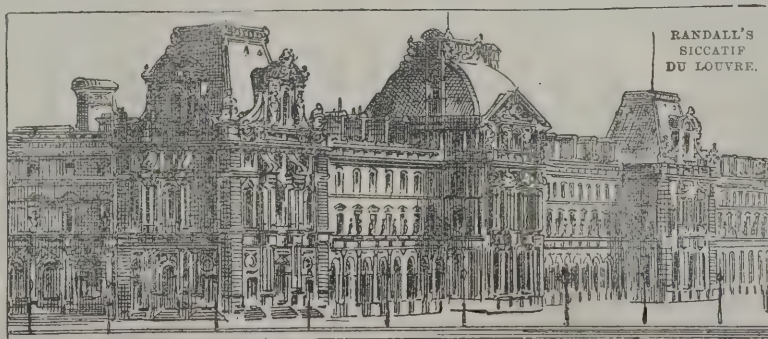
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pool, by making it impossible for the great transatlantic ships to enter the river. The second resolution was carried unanimously, and a vote of thanks to the chairman closed the proceedings of a very successful meeting. In addition to the information afforded by the speakers to the members of the chamber, it may be remarked that the promoters of the scheme proposed to have docks at Manchester which will have 26 feet of water, and so permit the entrance of large vessels. The question arises, how is the large quantity of 26 feet of water to be maintained? If it can be maintained, it is clear that they mean to rob the Weaver, and so deprive Liverpool of a current which comes down to scour the channels of the Mersey and add strength to the current. This will have an injurious effect upon the channel and bar, because if the tides lessen in strength they must also lessen in scouring power. If the promoters have power to do what has just been pointed out, they may enclose the water, which would have a very damaging effect. Again, the gates at the entrance to the canal would have to be closed half an hour before high water, as the tide would recede, and the entrance must be kept clear of vessels to insure the safety of the canal. A similar precaution has to be taken at the south entrance of the Great Float, where there are only 144 acres of water to be dealt with, as compared with 400 acres in connection with the canal. The navigation both at the entrance to and in the canal will be very difficult. The chief loch will be 550 feet long and 60 feet wide, and the water will run into it at the rate of four knots an hour, and there will often be the danger of grounding to contend against. Besides, it must be remembered the great amount of small craft which large vessels would be continually meeting with. Already there are 28,841 vessels going in and out of the river in connection with the Bridgewater Canal, 12,655 in connection with the Weaver, and 8,191 in connection with Ellesmere Port. The dangers with these small craft would be greatly increased, especially after the large vessels entered the twenty-two mile portion of the canal, and the dangers would not be much less in navigating the 2½ miles previous

to entering the loch. Should a vessel get out of position she would go right across the island. Of the three lochs at the entrance, only one will be of any practical use for the ship canal, the other two being respectively 300 feet long by 40 feet wide, and 100 feet long by 20 feet wide, and useless for the class of vessels it is proposed to take up to Manchester. Now that the Chamber of Commerce has entered energetically into the opposition, it is most likely that new and important evidence will be given.

#### DECISION IMPORTANT TO BUILDERS.

THE following case came before Judge Bedwell last week in the Goole County Court, being a claim for 50% damages. Plaintiff (Henry Swann) is a builder and contractor of Goole, and the defendant (Henry Holtom) is an architect and lives at Bond Street, Dewsbury. Mr. Watson appeared for the plaintiff, and Mr. Ibberson, of Dewsbury, for the defendant.—Mr. Swann said that in the month of August 1884 he saw an advertisement in the *Goole Weekly Times* for the erection of a new co-operative stores for the Goole Co-operative Society. He got the contract, which was signed in Dewsbury on September 9 last year. Mr. Holtom, of Dewsbury, was the architect, and drew out the quantities, for which he charged 35%. He got the certificates from the architect, and he had received 625%. He did work to the amount of 241% before he asked for another certificate. He wrote for another certificate, and the architect came over and said he could not give him one. The 241% had nothing whatever to do with either plumbing or slating. The architect appeared to be refusing the certificate at Mr. Schofield's request to keep back money for slating and plumbing. The clerk of the works (Mr. Rd. Elliott) met the architect and himself at the railway station, and he (the architect) would not give him the 200% which he thought he was entitled to. He asked the architect for money, but he would not give him any, and he had to borrow money in order to pay wages. He saw Mr. Schofield on the Monday following

and asked for money, and as he declined, he stopped the work. He (Mr. Schofield) said he had not given him money because if he did have a draw he would stop the work. He subsequently received two sums of 20% and 25% from the Co-operative Society. He (witness) started on a new contract on the following Wednesday, and he was to be guaranteed work. On the following Friday he got 20%, and on the next but one he got 12% to pay 17% wages. He saw Mr. Everett, who had a consultation with the defendant, and ultimately they gave him (witness) 50% to close the contract. He accepted that as he was obliged to do something.—Mr. Watson said that it was the duty of his legal friend to prove that the plaintiff had not done his work in a workmanlike and proper manner, and there was, he believed, no allegation that he had not done his work in a proper manner. Mr. Swann was obliged to accept that 50% as the architect would not give him a certificate.—His Honour ordered a nonsuit in the case, as the plaintiff ought to have held out and not accepted the 50%.

#### PAYMENT FOR PLANS.

In the Scotch Court of Session, on May 29, before Lord Fraser, in the case of *Armstrong v. Cranston*, the record was closed and a proof fixed. This case has arisen out of a dispute regarding the payment of the architect's fees for the designing of the reconstructed Waverley Hotel, Princes Street, Edinburgh. The pursuer, an architect in Edinburgh, sues the defender, a well-known Edinburgh magistrate, and proprietor of the old Waverley Hotel, for payment of three separate sums amounting in all to 686*l.* 12*s.* 6*d.*—for services rendered by the pursuer in connection with the reconstruction of the hotel, 568*l.*; remuneration in preparing plans for stock-rooms and warehouses, 25*l.*; and account for surveys and measurements in connection with defender's claim against the Glasgow City and District Railway Company, 93*l.* 12*s.* 6*d.* The pursuer states that on the instructions of the defender he prepared the necessary plans,

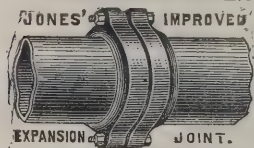
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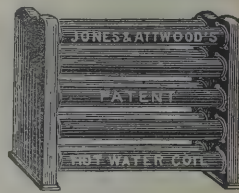
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specifications, and drawings, and made out the schedules of measurements or bills of quantity for, and superintended the erection and completion of, the present Waverley Hotel occupied by the defender; and that he was employed on the ordinary professional footing, and was entitled to charge the professional fee of 5 per cent. on the actual cost of the work done. The cost of the work under the original contracts was estimated at 10,031*l.*, but the defender made considerable additions and alterations during the progress of the work, which added largely to the cost, and the pursuer believed that the final cost of the portion of the original design now erected to be not less than 13,300*l.* Upon this amount the pursuer charges for his professional services as architect a fee of 4½ per cent., and claims to be entitled to remuneration in addition for preparing schedules of measurement from the contractors, and a fee at the completion of the works for measuring up the alterations. The pursuer states that the defender has not only refused to pay the sum in question, but has made unfounded allegations of negligence and unskilfulness on the part of the pursuer, and charges of professional dishonesty, for which he holds the defender responsible, and he specially reserves his claim against him for *solutum* and damages in respect thereto. The defender states that as the pursuer had only recently started in business in 1881, when the new building was projected, it was never contemplated by either party that a full maximum charge should be made for services to be rendered, and that various blunders made by the pursuer in his plans of the building had caused serious loss to the defender. The pursuer's measurements were further found to be inaccurate throughout, so that the contractors would not accept his reports for the purpose of assessing the amounts due to them, and the whole work had to be remeasured at the expense of the defender. The defender is, however, willing to pay 354*l.* 1*s.* 8*d.* in full of all claims, this sum being arrived at as follows:—Claim for Waverley Hotel, 598*l.*—less payments to account, 110*l.* 10*s.*, and sum received from contractors

by pursuer for measurements, 200*l.*, leaving 287*l.* 10*s.*; claim for workshops (admitted), 25*l.*; claim for Glasgow Hotel, 93*l.* 12*s.* 6*d.*, less struck off by auditor of Court of Session, 52*l.* 10*s.*, leaving 41*l.* 11*s.* 8*d.*

### THE SCIENCE AND PRACTICE OF VENTILATION.\*

By ROBERT BOYLE, Ventilating Engineer.

THE word "ventilation" is derived from the Latin word *ventilo*, to ventilate or to blow, and in its most ordinary signification implies movement of air with reference to the removal of impure atmosphere. Ventilation and health are so conjoined that it is impossible to consider the one without keeping the other in view. In this enlightened age we are fortunately becoming more alive to and appreciative of the laws of nature which govern and maintain health and add to our welfare and enjoyment of life. This is evidenced in a marked degree in the improved construction of our buildings, and the care and attention which are now bestowed on their hygienic arrangements by both architects and occupants.

This most desirable and satisfactory state of affairs has not, however, been arrived at without very hard work on the part of many earnest men, who have perseveringly pressed upon the attention of the public the necessity of pure air in their homes and halls for the proper maintenance of health, and their social, moral, and physical improvement. Without such men to lead the van and prepare the way practical sanitary science would have great difficulty in making headway, for before the people can be brought to accept the means of preserving health, they require to be educated up to and taught the necessity for doing so, and shown in a plain but forcible manner the important advantages to be derived thereby, and the injury and loss sustained by not giving heed to the

prescribed precautions. The names of Rumford, Franklin, Sutton, Hales, the Marquis of Chabannes, Morin, and Tredgold, along with many others, are well known to the student of sanitary science as those of men who did much to elucidate the difficult problem of ventilation, but, unfortunately for the speedy advancement of the cause, their efforts did not receive that recognition and encouragement at the time which they deserved. From the earliest times the necessity of pure air for the preservation of health and as a protection against disease has been known, and provision, of a kind, made to secure it. Varro mentions that Hippocrates preserved several cities in Greece from an epidemic pestilence by an arrangement of apertures in the dwellings, by means of which a constant through-draught and change of air were secured. Vitruvius, Pliny, Celsus, and Agricola also made a special study of the subject, the latter being credited with the invention of a system of ventilation by means of heat.

Sir Christopher Wren fully realised the importance of proper ventilation, and devoted considerable attention to the practical development of it, one of the buildings which he attempted, though unsuccessfully, to ventilate being the old Houses of Parliament. Desaguliers, Sir Humphry Davy, and many others also exercised their ingenuity on that building, but without any very satisfactory results. Dr. Boswell Reid's system, in spite of the objections raised against it, is certainly the most successful of the many plans tried.

Previous to the discoveries of Priestley, Schule, Seguin, and Lavoisier, the term "ventilation" had no definite and distinct meaning, at least such as is now attached to it. The great features which it presents might have been unfolded, but the chemistry of the numerous gases which have since been made known was a blank in the page of science. The experiments of Pottenkofer, Roscoe, and Péciot, have also reduced the subject to a measurable quantity, and brought the science of it within the grasp and comprehension of all who choose to study it.

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The evil effects of breathing impure air are now so generally known and admitted that it is almost unnecessary for anything to be said here to impress the fact further.

It may, perhaps, be as well, however, to mention that it has now been established, on the most incontestable data, that the majority of the diseases from which man suffers arise from preventable causes.

Their origin being clearly traced to the polluted air we breathe—"Statistical inquiries on mortality prove beyond a doubt that of the causes of death which are usually in action, impurity of the air is the most important. Individual observations confirm this" (Parkes).

The effect which is produced on the respiratory organs by impurities inhaled into the lungs has long been known. Ramazzini in the last century, and Thackrah fifty years ago directed special attention to this point. "Consumption is the disease which carries off a fifth or more of the persons born in Britain, owing no doubt to the changeableness of the external climate, but much more to the faulty modes of warming and ventilating the houses" (Arnott). This is corroborated by Galton, who says:—"The breathing of foul air, contaminated by the breath of other persons, appears to be the special agent which develops consumption and diseases of that sort."

Dr. Reid is still more emphatic in his denunciation of the evil effects of impure air. He says:—"After these (mental anxiety or defective nutriment) no other cause, at least in modern times, appears to have inflicted so great an amount of evil on the human race as defective ventilation. When the air is of inferior quality, the mental faculties are subdued and deteriorated in proportion as the body is oppressed by the vitiated atmosphere, pure air being not only essential for the proper development of the bodily frame, but also requisite for the due energy of the intellectual functions. . . . The ravages of consumption, and the extended catalogue of evils accompanying diseases of the organs of respiration, point out the vast amount of misery that might be obviated, and of death that might be prevented, were the

leading principles and practice of ventilation more generally understood. The number of individuals is comparatively small who are really aware of the magnitude of the evils arising from the respiration of vitiated air. It is not generally understood that in innumerable public and private assemblies, churches, theatres, schools, &c., an atmosphere is often breathed for hours continuously which is as foul and offensive, compared with the air that is congenial to the lungs, as the water of the Thames at London Bridge contrasted with a pure mountain spring. It is no exaggerated statement to affirm that the greatest scourge with which this and so many other climates are affected—viz., consumption—owes its origin more to ignorance of the laws of health connected with the peculiarities of exposure to alterations of air and temperature, and to the severity of local draughts, than to any disadvantages connected with the local state of the atmosphere which cannot be met with proper care and attention; that numerous other diseases, particularly catarrhs, rheumatisms, and pleurisies often spring from this cause; that a depreciated tone of mental vigour, as well as of bodily health, may in endless examples be traced to the same cause; that the most deadly plagues that have ever appeared have been aggravated, if not caused, by want of cleanliness and ventilation; and that the ordinary typhoid fever of this country almost invariably originates under similar circumstances. But, independent of the more serious and direct attacks of disease, there are numerous minor evils that often prey upon the constitution where the air is of inferior quality. The long-continued action of vitiated air gradually undermines the tone and strength of the stomach: the appetite diminishes, and the citadel or mainspring of the constitution being thus enfeebled or destroyed, all the other powers of the system also gradually give way. Nor are the moral and intellectual faculties to be forgotten in considering the influence of a vitiated atmosphere, as the energy and tone of both are lowered and depressed by bad air.

When the atmosphere is pure, and the system

free from disease, the air feels light and elastic, respiration is performed unconsciously, the mental faculties are serene, the bodily strength great, the appetite good, and the sleep calm and refreshing. But when the air is of inferior quality the respiration becomes uncomfortable, and often anxious or oppressive; the strength begins to fail, the general tone of the system is depressed, the power of bodily or mental exertion becomes impaired, the sleep anxious and uncertain, and, in extreme cases, where the air has been vitiated to a great extent, death rapidly ensues. In more minute proportions, impurities in the air produce an endless variety of discomfort and disease, sometimes inducing a sense of languor or debility that may barely be recognised; while, on other occasions, they undermine the constitution by a slow and insidious action, which is too often accompanied by a permanent loss of health. . . . The extreme extent to which disease, suffering, and death are produced by bad air and by offensive draughts and currents is well known in the medical profession. . . . Every one who has traced the insidious progress of that disease which counts its weekly victims, in the metropolis alone, by hundreds, is impressed with the power and influence exerted by impure and overheated atmospheres, particularly when the constitution is tried alternately with them and noxious draughts and local currents."

It was long contended by many, and is even at the present day by some—such is the perversity of human nature—that the proper place from whence to extract the foul air was at the floor level, the contention being that the carbonic acid gas exhaled from the lungs, owing to its being so much heavier than common air, immediately falls to the ground, and lies there and accumulates unless it is drawn off.

Now this would be all well and true if it referred to carbonic acid as a separate and distinct gas; but there has not been sufficient, or indeed any, allowance made for its admixture with the air which is expelled from the lungs, or its highly rarified state, rendering it for the time being lighter than ordinary air. Its natural course, under these conditions, is to ascend;

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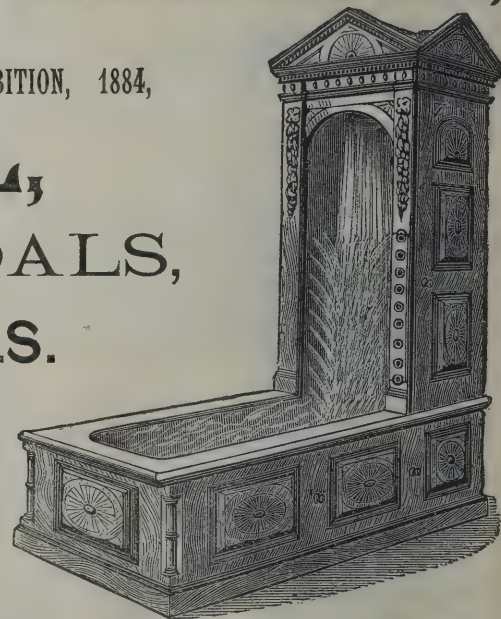
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and it will continue doing so until it comes into contact with some cooling body, when it is reduced to its normal state and diffuses itself in the atmosphere of the room, unless provision is made for drawing it off. It is a common error to suppose that carbonic acid gas tends to descend to the floor of any apartment in which it may be evolved by respiration or combustion. In all cases where carbonic acid has once mingled with a considerable proportion of air, as in the processes of respiration and combustion, it does not again separate from the gases with which it may have been blended, in consequence of its specific gravity. If, then, the vitiated air be removed by an opening above, it will be carried away with the least chance of contaminating the remaining atmosphere; whereas in apartments where the air is withdrawn at a low level, and the usual temperature maintained, the products of respiration must perpetually tend to return upon the body from which the air has been expired.

"In this country, air vitiated by respiration tends invariably upwards; the products of combustion follow a similar course; hence an ascending movement should be given accordingly to the air. The ascending movement is also the natural system. It may be assumed, then, that a system which is not only in unison with the laws of nature, but also that which almost universal experience dictates, may be safely followed as a guide in leading us to give a decided preference to ascending movements" (Reid). To quote other authorities, Sir James Clarke says:—"The pure air should enter below and the deteriorated air escape from above." While Professor W. T. Brande states that, "In the ventilation and warming of buildings there are two essential points to be kept in view. First, the free escape of the warm air from above; and secondly, the admission of a compensating quantity of fresh air from below." Dr. Ure also condemns the downward circulation:—"The downward circulation of air every sound physiologist will deprecate as a noxious fallacy."

It must be confessed that there is considerable diversity of scientific opinion with

respect to the quantity of air a man consumes, the extent to which it is vitiated by respiration, and the quantity of air per head which is necessary to secure efficient ventilation. Vierordt states that a man makes 16 respirations per minute, the volume of air expired each breath being 30.51 cubic inches, which gives 480 cubic inches expired per minute, and the quantity of carbonic acid contained in the expired air 4.6 per cent. Tredgold gives the number of respirations as 20 per minute, the volume of air inhaled each respiration being equal to 40 cubic inches, giving 800 cubic inches as the volume per minute which is expired from the lungs after use. Dr. Reid also gives the number of respirations as 20 per minute, but fixes the volume of air inhaled each respiration at 16 cubic inches. He likewise states that it may be assumed that a man consumes oxygen amounting to 10 per cent. by volume of the air inspired, and discharges 7.8 per cent of carbonic acid gas.

Pettenkofer's and Dr. Angus Smith's experiments lead me to the conclusion that if the figures given by the above authorities are averaged, the result may be then taken as fairly correct. "Each cubic foot of gas burnt per hour may be assumed, upon an average, to vitiate as much air as would be rendered impure by the respiration of an individual" (Galton). A common small gas burner will burn nearly 3 feet per hour. With regard to the quantity of air that should be supplied for each person, there is even a greater diversity of scientific opinion.

The amount necessary is variously fixed at 150 cubic feet per hour (Vierordt), up to 3,000 cubic feet per hour (Parkes); but I think that the cubical contents of the room, the number of people occupying it, and the nature of their occupation, have a good deal to do with determining the amount of ventilation for change of air necessary, and this can only, with any degree of accuracy, be determined by examining and treating each building separately and according to its requirements, just as a doctor would treat a patient according to his specific complaint. Richardson says:—"The

aid of practical experience is called upon in behalf of every building at all distinct from the generality; and practical men must be consulted where any difficulties are likely to arise." It should always be borne in mind, however, that there are no hard-and-fast rules which govern the exact mode and determine the extent of the ventilation of a building. Ventilation is of necessity a very elastic subject, and to be successfully grappled with it must, to a certain extent, be treated broadly; no narrow or contracted ideas—which are, unfortunately, too common—can ever assist in advancing or raising it to that honourable position amongst the sciences which it is so justly entitled to occupy.

It being now generally allowed that the proper place from whence to extract the vitiated air is the highest part of the room, and that the supply of fresh air should be introduced at the lower part, it may be useful to the reader to know what appliances have been tried to effect this, and which have been found to answer the purpose best. It would be quite impossible, within the limits of this article, to describe all the contrivances which have been brought out from time to time, as their name is legion, so I will confine my remarks to a description of those methods of ventilation which are best known and representative of their class.

The different methods may be divided under four headings. First, ventilation by a plenum movement, that is, when air is forced into a building at a high velocity by means of fans or water-motors. Second, by a vacuum impulse, the air being exhausted out of a building by mechanical means, or the action of the external atmosphere. Third, by a mixed movement, being a combination of the plenum and vacuum movements. Fourth, automatic or natural ventilation.

The principle of the plenum system is to secure a strong pressure of air inside the building, and so force the foul air out through any openings that may be provided—doors, windows, &c.—and at the same time prevent draughts from passing in through them. This system

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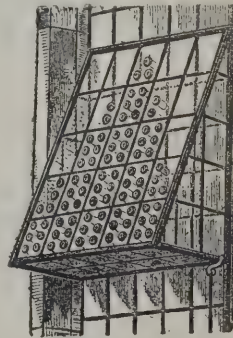
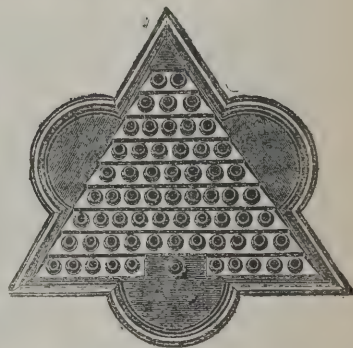
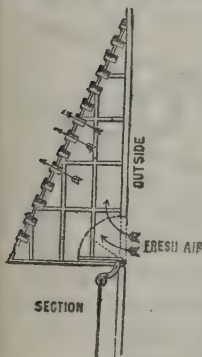
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has not, however, proved a success, and is disapproved by a number of the highest authorities. It is applied to Madison Square Theatre, New York, and at a meeting recently held at the Royal Institute of British Architects, that theatre was pronounced by a member, during a discussion on ventilation, to be the worst ventilated theatre he had ever been in.

It is claimed by the advocates of the plenum movement that a dense atmosphere is supposed to be more advantageous than that which is comparatively attenuated. This is a pure fallacy, however, and contrary to the laws of nature, which fact in itself is a sufficient condemnation of the system. Dr. Reid, referring to it, observes, "It is not unfair to conclude that the pressure which actually obtains at the surface of the earth must be considered the best for the maintenance of health and strength, both of body and mind. Those who advocate plenum ventilation too frequently trust entirely to the machinery with which the air is supplied, both for its introduction and subsequent expulsion. Few circumstances contribute more to produce dissatisfaction in ventilating arrangements." Galton says, "Theoretically, the propulsion of air into a room would expel all the foul air through the cracks of windows and doors, and the existence of pressure in the room would tend to prevent draughts of cold air from doors and windows; but in practice, in the ventilation of hospital wards, the system of propulsion, i.e., forcing the fresh air into the room, and allowing the vitiated air to find its way out, has not been generally found successful as a means of purifying the air. The air forced in seems to seek the first place of escape when circumstances allow of it. It will be found simpler to dispense with propulsion, and to rely upon the action of extraction shafts to draw in the air required through adequate channels provided for the ingress of fresh air." The New Law Courts are ventilated on the plenum principle, and the state of the ventilation in those buildings is notorious. The judges and others who have occasion to occupy the Courts are constantly complaining, through the press and otherwise, of the intolerable draughts

which are found in one part of a Court, and the stifling and foul atmosphere which exists in another part. This, it may be mentioned, is the common experience wherever the plenum method of ventilation is used.

Vacuum ventilation consists in exhausting the air out of a building either by mechanical means, expansion induced by heat, or by extraction shafts fitted with automatic ventilators, the diminished pressure arising from the expansion of the air within making it give way before the pressure of the external air. Air rushes into an apartment only when there is a want of resistance. If the air in it be not drawn out, none can enter of itself. In mixed ventilation, both the plenum and vacuum movements are brought into action, the supply of air being artificially forced in, and exhaust ventilators used for the extraction of the foul air. So far as the mode of admitting the air is concerned, the same objections apply to it as to the plenum system, and it is therefore not to be recommended.

Automatic or natural ventilation has proved more universally successful than any artificial method that has ever been introduced. This is to be accounted for by the fact that nature has made ample provision for its own support and well-being, and it only remains for us to give it a chance to assert itself by permitting it to heat the artificial structures in which we live and congregate in the manner it finds most in accordance with its laws, we of course assisting it according to our lights, and utilising its force in such a manner as to derive the greatest amount of benefit and comfort possible. The following are amongst the many advantages which the automatic has over mechanical ventilation. It is entirely self-acting; has no mechanical movement to get out of order; requires no attention to keep it in action, so that the ventilation of a building can never suffer through the machinery breaking down or the neglect of the person appointed to look after it, as is almost invariably found to be the case where mechanical systems are used; it is easy of application to any existing building; is much less expensive to apply, and the first cost is the

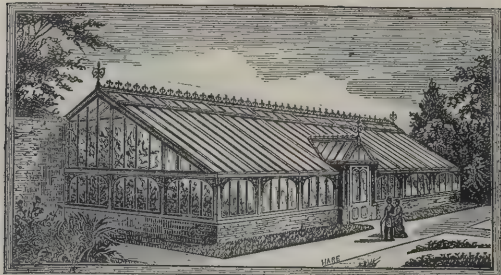
last, there being no after-expense necessary to keep it in operation, as with machinery, water-power ventilators, and systems depending upon heat for their action. In the application of the automatic system to a building, exhaust ventilators of the "Air-pump" ventilator type are fixed on the roof at the highest point, so as to permit of the wind getting at them freely from all points. Shafts connect the ventilators with the interior of the building, and may be fitted, if desired, with regulating valves. For the admission of fresh air, vertical inlet tubes or brackets are placed round the walls, and communicate with the outer air by means of holes cut through the walls. The size of the building, and the purpose for which it is used, determine the size and number of extractors and inlet tubes required. To make ventilation useful, it must act at all times spontaneously. Any call upon attention, even such as the opening of windows or their regulation in a particular manner, will be apt to be neglected. This is one of the chief causes of the many failures where mechanical or other systems requiring attention have been used.

(To be continued.)

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The suggestions as regards wall linings and floor, may, of course, be modified as best adapted to the building in which the closets are used; and in the consideration of such details, alternative schemes will readily present themselves.

At the recent **HEALTH EXHIBITION** (South Kensington, 1884), amongst a series of official tests, under the supervision of Baldwin Latham, Esq., C.E., and the Jury No. 9, Class XXIII., and successfully withstood by this closet, the following may be cited in evidence of its efficient action. Being fixed in position shown in illustration, with "**JENNINGS' PATENT SINGLE FLUSH WASTE-PREVENTING SYPHON CISTERN**" 5 feet over, with 1½ inch down pipe, ten apples (averaging 1½ inch diameter) and a flat sponge about 4½ inch diameter were thrown into the basin. The water, as well as the whole of the exposed or dry surface, was first blackened with plumber's "smudge," and the sides covered by four pieces of thin sanitary paper, which adhered closely to the soiled surface. The handle of the cistern was then pulled, and the two-gallon flush liberated. After seven seconds (the time occupied by the discharge), a receiver placed under the trap outlet was removed, containing in the blackened water the ten apples, the sponge, and the four pieces of paper, no traces of the soil remaining visible upon any part of the apparatus.

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# The Architect.

## THE WEEK.

M. HÉBERT has accepted the direction of the French School in Rome. In consequence M. GUSTAVE BOULANGER has become the principal professor and chief of the section of painting in the Ecole des Beaux-Arts. The appointment of M. BOULANGER will have an influential effect upon the success of the school. He represents what can be done by the teaching there. M. BOULANGER was one of the pupils of PAUL DELAROCHE. In 1849 he won the Prix de Rome, and between that time and 1882, when he gained a chair at the Institute, M. BOULANGER has had a full share of the rewards which are to be gained in France by genuine men. He is equally competent whether he paints pictures of ancient Rome, modern Algiers, or undertakes decorative works. In a post like that of *chef d'atelier* character is of even more importance than ability. Fortunately for the students they have now over them a man who possesses a reputation for generosity, frankness, and urbanity, and who is endowed with a courage that is equal to maintaining the interests of the school on all occasions. As a critic he is most severe on his own works. M. BOULANGER holds England in esteem; he admires the works of English artists, and students who care to come to Paris may be confident of securing not only the best of teaching, but a hearty welcome in the Rue Bonaparte.

A GREAT improvement has been effected at the rooms of the Institute of Architects by the introduction of electric light, and it was first used on Saturday last with entire success. The failure of the light on Monday evening before the proceedings commenced was one of those accidents which cannot be foreseen, and was due to no negligence. But trifling inconvenience could have been caused, as the light was reinstated at an opportune moment. Sir COURTS LINDSAY is constructing the necessary apparatus at the Grosvenor Gallery, which before long will be in working order. Pending its completion a temporary engine in the courtyard behind the building is used for supplying the gallery, and also the Institute, by a connection which, in its circuit, supplies two other establishments in the neighbourhood. In the new apparatus all contingencies will be provided against, and the breaking of a driving belt, as happened on Monday night, would not matter. In finished machinery breakdowns are always largely allowed for. For instance, in lighthouses the failure of all the reserve engines would not cause more than a brief suspension of light. Matters are so managed that by a comparatively short and simple operation the mineral oil apparatus slides into position, and replaces the carbon apparatus.

THE Prefect of the Seine has selected the following works from the Salon for this year's purchase on behalf of the Municipal Council of the City of Paris:—Paintings: *Le Val à Villerville en juin*, by M. EUGÈNE BOURGEOIS (1,500 frs.); *Vue de Paris*, by M. A. CASILE (2,000 frs.); *Paris, Port de Mer* (the basin in the gardens of the Tuileries), by M. LUIGI LOIR (3,000 frs.). Sculpture: *Respublica Gallorum*, plaster, by M. COUTAN (4,000 frs.); *Lulli Enfant*, plaster, by M. GAUDEZ (5,000 frs.); *Giotto*, marble, by M. GUGLIELMO (8,000 frs.); *Au Loup*, plaster, by M. HIOLIN (5,000 frs.); *Horde de Cerfs*, plaster, by M. LEDUC (5,000 frs.). It will be seen that, in spite of financial difficulties, eight works have been acquired.

HER MAJESTY has been graciously pleased to accept the dedication of Mr. ERNEST LAW'S "History of Hampton Court Palace and Tudor Times," which will be published early next week by Messrs. BELL & SONS, of York Street, Covent Garden. Amongst the many places of interest that lie within easy reach of London, there is none, except Windsor Castle, that can be held to vie in historic charms with the Queen's magnificent palace at Hampton Court. Yet, strange to say, no one has hitherto been found to investigate and chronicle its past; and its

architecture, which is particularly characteristic of the Tudor period, and in many points most unique and instructive to the student of ancient manners, has been almost entirely overlooked in books where these topics are treated of.

To supply this deficiency, Mr. LAW offers his contribution in the shape of a work consisting of 400 pages, which should prove of much interest, the illustrations, numbering 130, being intended to form a special feature. These are composed of autotypes, typo-etchings, and lithographic and engraved plates. The autotypes have been executed by the Autotype Company, from negatives specially taken for this work, after five of the most interesting historical pictures at Hampton Court Palace, by HOLBEIN and other artists.

AMONG the chief topics dealt with are WOLSEY's private life at Hampton Court; anecdotes of him and HENRY VIII.; his building and decoration of the palace; his banquets, masques, and balls; his furniture, tapestry, and plate; his household and retinue; and his entertainment of ambassadors. HENRY VIII.'s domestic life at Hampton Court is also fully described, anecdotes being given of him, ANNE BOLEYN, and JANE SEYMOUR, and the following events narrated:—The birth and baptism of EDWARD VI.; the death and burial of JANE SEYMOUR; the marriage and arrest of CATHERINE HOWARD; and the apparitions of the ghosts of JANE SEYMOUR, CATHERINE HOWARD, and EDWARD VI.'s nurse. Under the reigns of EDWARD VI. and Queen MARY there are accounts of, among other events, the putting of Hampton Court into a state of siege by the Protector SOMERSET; the honeymoon of MARY and PHILIP II.; MARY's reconciliation with ELIZABETH, &c. To Queen ELIZABETH's life at Hampton Court five chapters are devoted.

IT is proposed that M. DE LESSEPS should be appointed President of the Commission for the International Exhibition, which is intended to be held in Paris in 1889. The name of the pioneer of the Suez Canal is so universally respected that with such a President the project would no longer be considered as a revolutionary glorification. Many countries may not applaud all that was done in 1789, although willing to take part in a peaceful competition in art and industry. With M. DE LESSEPS as president, there would be a guarantee that nothing would be done in connection with the exhibition which would prejudice international interests. It is true he has to bear the weight of many years, but at the present time he is possessed of the energy of youth.

A CURIOUS account was given by Mr. R. S. CLOUSTON at the meeting of the Scottish Society of Antiquaries of the exploration of a chambered cairn of the Stone Age, situated on a point of land jutting out into the Loch of Stennis, at Unstan, Orkney. The cairn contained an oblong central chamber, sub-divided into several compartments by large flag-stones set on edge. The chamber measured about 21 feet in length by about 5 feet of average width, with a small side chamber opening off the back. The passage leading from the chamber to the exterior of the cairn retained its roofing stones for 11 feet of its length, but the roof of the chamber itself had fallen in. Out of an immense quantity of broken urns discovered five have been reconstructed. They are broad, shallow, basin-shaped vessels, with round bottoms and vertical or slightly-projecting rims, presenting a striking contrast in their forms, and the hard, close-grained texture of their material, from the deep, flower-pot shaped vessels of the Bronze Age.

THE late M. GALIGNANI was one of two brothers who made a fortune in Paris through the patronage of English and American visitors. When he resolved to bequeath a vast sum of money for charitable purposes, he selected Paris rather than New York or London to be the recipient. The conditions of the will have been considered by the Municipal Council, and at the meeting on the 5th inst. it was resolved to appropriate a part of the money to the erection of a *maison de retraite* in the Boulevard Bineau at Neuilly. The work will cost about 60,000*fr.*



## THE CONGRESS OF FRENCH ARCHITECTS.

THE thirteenth congress of the Société Centrale des Architectes began on Monday in Paris, and has been continued during the week. By the permission of the Government the meetings have been held in the building of the Ecole des Beaux-Arts. On Monday and Tuesday the members assembled in the theatre, which is adorned with the famous "Hemicycle" by DELAROCHE, and the picture of *Romulus overcoming Acron*, which was painted by INGRES in 1812. The meeting on Wednesday was in a different room, in order that more space could be available for the exhibition of plans and models. The attendance was large. England was represented by Mr. R. P. PULLAN, who came over accredited from the Royal Archaeological Institute. The selection was especially appropriate for the occasion, inasmuch as Mr. PULLAN was the *collaborateur* of M. TEXIER, and worked in the same fields in the east with the French archaeologist. He was received with respect, and honoured with a seat beside the chairman.

The proceedings on Monday were opened with an address by the president, M. QUESTEL, who has been a member of the Institut for fourteen years, and is vice-president of the General Council for Civil Buildings. It was brief but to the purpose, and throughout the proceedings the chairman evidently desired that more prominence should be gained by others instead of by himself. A good deal of routine business had to be gone through, which devolved on the secretary, M. PAUL WALLON, who must be an administrator of the first order, for he was able to insure that the business of the week should be gone through without a hitch. Then an endeavour was made by a member to read a paper which was not set down in the programme, but when the matter was referred to the meeting there was an unanimous decision in favour of adhesion to the arrangements. It may be remarked here that the papers were read by the writers while seated at a table, which is a more comfortable arrangement than is adopted in England, although it may be less suggestive of the orator.

The first paper was read by an architect with a name that may be called English, M. LEOPOLD HARDY. The subject was one which is always interesting, although most difficult to treat, being a review of the present condition of architecture in France as it is illustrated by the designs in the Salon. M. HARDY is not an exhibitor this year, and while he endeavoured to be impartial in his criticism, he was not afraid to be outspoken. He raised a similar objection to what is heard in respect of the exhibition of the Royal Academy, namely, that too large a portion of the wall space has been assigned to students' works and drawings of old buildings. M. HARDY does not believe in the advantage of re-exhibiting designs in the Salon which have been prepared for public competitions, and he is far from satisfied with the accepted design for the Gambetta Memorial, of which there are nine views in the Salon. Architecture that is at once rational and ideal is, according to M. HARDY, not much in vogue at the present time in France. He advocated utility as a principle, advising his hearers that the arrangements for occupation should form their first consideration when planning a building, then the requirements for service, and that decoration should be thought about when those points were settled satisfactorily. But in respect of façades and ornamentation, M. HARDY expressed regret at the too rigid adherence to ancient forms and processes. They had all been nursed, he said, in Classicism, but truth alone was deserving of their affection, and the motto of the architect should be "*Amicus Plato, Magis amica veritas.*" In all this there was a strong resemblance to one class of English papers which may be heard at meetings, and to a visitor there was an attraction in the familiar thoughts. In cases of the kind the question is proposed by the Sphinx, but where is the answer. From the days of the jesting PILATE, how often has the question been asked, "What is Truth?" and in no department of life is an answer more difficult than in building.

After the meeting there was a visit to the printing-office, where the transactions of the Society are put in type. But none of the Paris houses can compare in size or in completeness of machinery with the larger printing-

offices in London, such, for instance, as that belonging to Messrs. SPOTTISWOODE & Co.

The proceedings on Tuesday began with an early visit to the Louvre, which attracted a very large crowd. Visitors to the sculpture galleries during the past year or two will remember that they were unable to see all the rooms. Works were in progress, and, in consequence, it was considered necessary to alter the positions of the figures. The *Venus of Milo*, for example, which is the crowning glory of the museum, had to be shifted from the end of the gallery to a place at the side. It was those works which M. GUILLAUME had undertaken to describe, and the knowledge which was abroad that many archaeological discoveries had been made was enough to collect architects from all parts of Paris. M. GUILLAUME had prepared a paper, but he afterwards changed his mind and adopted a less formal manner of discourse. Two of the great Roman lavabos were filled with large photographs and plans, on which every fresh discovery had been recorded, and by their aid M. GUILLAUME was able to explain all that had been revealed.

Every one who has read a guide-book to Paris is aware that there was on the site an older building than that "Old Louvre" which PIERRE LESCOT designed. The word "louvre" is supposed by some to come from "lupara," a forest, in which one of the early kings ordered a house to be built for himself and his attendant hunters, just as shooting-boxes are now raised in Scotland. PHILIP AUGUSTUS, in the end of the twelfth century, erected a castle here to gain control over the Seine, and from that time until FRANCIS I. grew tired of Gothic donjons and threw down the walls, the Louvre was a royal residence. In the alterations in the sculpture galleries it was necessary to make provision for heating, and the floor was accordingly removed. To the surprise of the architect and contractors Mediæval masonry was found underneath. A careful examination was made, débris was removed, and it is now possible to see beneath the galleries a most interesting substructure. On Tuesday the place was lighted by candles, which were held by attendants, and probably it can only be visited under special conditions. It is evident, from the columns and the remains of groins, that there was a great hall on the site, and judging by the masonry it may be considered to have been erected in the thirteenth century. There have been many alterations about the Louvre in the course of six centuries, and although it is now so much below the ground level, the floor of the hall may have been a few feet above the level of the Seine. A large circular opening suggests an oubliette, and recalls the legends of the Tour de Nesle on the other side of the river, which has been supplanted by the respectable building of the Institut de France. The discoveries by M. GUILLAUME have been described by him in some of the archaeological transactions, and he has informed us that he is preparing another work on the subject. The visit to the subterranean Louvre excited the greatest interest, and by itself was enough to make this week's congress memorable.

The thirteenth century appears quite modern if compared with the period of which M. LEDRAIN afterwards spoke. The Assyrian Gallery in the Louvre, which contains the colossal sculptures which M. BOTTA secured, has been enriched by several incomplete figures which have been carved out of a dark grey stone that seems almost as hard as basalt. They stand in front of the winged bulls and the muscular heroes who strangle lions as if they were kittens. From their unassuming appearance, they are likely to be passed with a shrug by the ordinary sightseer. But for an architect, there is no work of a sculptor's hand which possesses more interest. The fragments represent the architect-kings of primitive Chaldea. M. FELIBIENS, when writing the lives of famous architects, endeavoured to gain the support of LOUIS QUATORZE and the Court for the art by explaining its regality of character, since the first architects were kings. Such wonderful assertions were to be found in the dedications of those days, we may assume that if any fine gentleman condescended to open the book he accepted the statement as a specimen of grandiloquent conventionalism. But two centuries afterwards there is the Mission de Sarzee, several broken statues are exhumed, and it is now made plain beyond a doubt that the kings or chiefs of the Eastern land were so proud of their architect-



tural knowledge that it was the fashion to represent them with a sort of slab upon their knees, on which a plan of a building was accurately engraved, and with a scale to correspond. To what extent they represent the truth we need not inquire. The sculptor's art must have ceased long since if it had not been based on flattery. LOUIS XIV. did not single-handed frighten river deities, kill lions, and capture cities in the style that is wrought on the two big gates. The events are about as veritable as the palaces and jewellery and murders in the neighbouring Porte St.-Martin Theatre. The Chaldean kings, who lived at least sixteen centuries before our era, may have been as imaginative as the most Christian kings of the seventeenth century, and believed that they did other men's work with their own hands, in the same way as GEORGE IV. took credit for the courage he displayed at the head of a regiment at Waterloo. A slave may have drawn the plan in fear and trembling about the consequence of disapproval; but nevertheless the fact that a king adopted it gave an exaltation to the art from that day forth, and, when the erudite conservateur paid a compliment to his audience in the neat style of a Frenchman, who can wonder if there was for the moment a conviction of the pre-eminence of the art above its sisters?

The afternoon meeting commenced with a paper by M. MARCEL DESLIGNIERES on "Pottery." It treated of the art in all times and countries, the ancient pottery of America receiving its due share of attention. The writer kept throughout in view the relation between architecture and ceramics, and it is a subject which he has made his own, having read papers upon it before the Union des Arts Décoratifs. In one statement at least we venture to differ from M. DESLIGNIERES. He asserted that terra-cotta was never used by Greeks or Romans as a means of decoration for their temples. But in the excavations at Metaponten, which were carried out by the Duc de LUNES, terra-cotta was found in the materials, and two bas-reliefs were lately discovered near Nemi. Considering how much remains to be done in excavations, it is rather premature to assert any principle in respect to ancient decorative work as being universal in its application.

The paper was followed by a *causerie* that was no less exhaustive. The Société Centrale does its best to encourage fellowship between the metropolitan and provincial members. In answer to a special invitation M. COQUET came from Lyon to discourse upon Spain. The subject was described as *A travers l'Espagne*. For over an hour M. COQUET favoured his auditory with descriptions of the geography, geology, history, and productions of Spain, as well as of the buildings, statues, and Cosas de España in general. There was not a single note employed, and yet there was no hesitation throughout. The talk was not like ordinary talk or disjointed Parliamentary oratory, but consisted of definite sentences and paragraphs which would bear to be reported verbatim. As an intellectual exhibition it was a remarkable feat. The discourse was most likely carefully prepared beforehand, but the manner of delivery was so perfect and so quiet that it was impossible to point out a part that did not seem to be unpremeditated, or as they say in Spain, "segun y conforme." There was no attempt at elocution, and from beginning to end an uniform style was preserved. Some may think there was not much in the task, but let any one who is incredulous commit to memory about fifty pages of the introduction to FORD's "Handbook to Spain," and then endeavour to deliver them trippingly on the tongue, and they will realise the difficulty. The art was so marvellously concealed that we doubt if M. COQUELIN himself could have gone through the conference with so much ease.

A visit to the abattoirs at La Villette was arranged for Wednesday morning, but work of the kind cannot have much interest for an English architect. For the afternoon meeting it was arranged that MM. G. PERROT and CHIEPIEZ were to describe their attempt to realise the appearance of the first temple of Jerusalem from the descriptions, but the length of this notice prevents us from giving an adequate account of it this week. M. LUCAS was also to give an account of the congress of learned societies. Thursday was devoted to an excursion to Rouen. On Friday the reports of various committees are to be read, and on Saturday the medals of the societies are to be distributed. In the evening will be the annual dinner.

## THE ROYAL GOLD MEDAL.

THE closing meeting of the session of the Royal Institute of British Architects on Monday evening has been one which in every way will compare favourably, to say the least, with any similar occasion in years gone by. It was characterised by interest of no common kind, and the dignity befitting an Institute representative of the profession of British architecture came to the front gracefully and spontaneously. The presence of the fair sex contributed honour to the occasion. Moreover, a genial atmosphere suggestive of pleasant business pervaded the assemblage, and was produced, no doubt, by the knowledge that the meeting had for its purpose the exchange of kindly courtesies consequent on the recognition of the valued labours of an esteemed *savant*, whose reputation in the course of years has culminated and spread so widely. In addition to this, other business had to be transacted in rewarding the studies of youthful aspirants to fame with well-earned and valuable tokens of approbation, and also to hang on the walls of the Institute a memorial portrait of the excellent past President, Mr. HORACE JONES.

First among the agreeable duties to be fulfilled was the presentation on the part of Her Majesty of the Royal Gold Medal by the Institute, through the hands of its President, Mr. EWAN CHRISTIAN, to Dr. HENRY SCHLIEMANN. The hearty pleasure with which it was apparent the meeting conferred the highest distinction at the disposal of the Institute on Dr. SCHLIEMANN, was amply repaid by the unfeigned pride and pleasure with which it was received, and words, however eloquent, could not have more gracefully expressed the appreciation with which Dr. SCHLIEMANN received the testimony of the regard he is held in by the British architects. His presence alone would have insured him the courteous reception accorded to him, seeing that men of the kind are seldom at a loss to find a pretext for absenting themselves, more especially involving, as his presence on Monday did, a voyage from Athens.

Next in order came the award and distribution of prizes, and the students who were fortunate enough to be present and personally receive their medals from the President will remember with pride that they received them in the presence of so typical an assemblage, not to mention the British Royal Gold Medallists, all of whom were present except Mr. BUTTERFIELD, who never attends any meetings, Mr. PENROSE, who has been recently engaged at Athens, and Professor DONALDSON. In years to come they may speak of the same to other students from the presidential chair. One lesson they could learn that night, said the President; they could strive to imitate Dr. SCHLIEMANN in his industry and energy in fighting against difficulties. Nor was it unlikely that they themselves might come to occupy the presidential chair of the Royal Institute. Had any one told him in his student days that he would some day be President of the Institute, he would have laughed at the idea. "Yet," said Mr. CHRISTIAN, "here I am"—a peroration which raised a good-humoured laugh. As to the prizes, the work submitted by the students had been so excellent that, as the President said, the Council had been taken by storm, and had been obliged to award one medal after another, an act of extravagance of which he highly approved, notwithstanding his deep-rooted hatred of extravagance.

Mr. CHARLES BARRY presented the portrait of Mr. HORACE JONES for the acceptance of the Institute, and coincidentally with his first remarks the electric light shone out with theatrical effect. The hall had been in comparison but indifferently lighted with oil lamps as a substitute for the electric light, which in some unexplained way had failed, and for the gas, which had been displaced to make room for electricity. In speaking of the career of Mr. HORACE JONES, an allusion was made both by Mr. BARRY and Mr. CHRISTIAN to early days, when a band of students started on their travels abroad. Of these seven only three remained—Mr. HORACE JONES, Professor HAYTER LEWIS, and Mr. CHRISTIAN—all of which survivors had come to occupy the presidentship; or, to speak more correctly in the case of Professor LEWIS, the honour would have been his had he not declined it on the score of ill-health. Mr. FRANK HOLL, R.A., has done both justice to his sitter and to himself in the production of the excellent portrait of the



"substantial city magnate," in which Mr. CHRISTIAN said he could recognise the face of the comrade with whom he had walked across the Campagna of Rome in their student days. Mr. HOLL's intention of becoming an Honorary Associate of the Institute was in harmony with the other agreeable transactions of the evening, and the appreciation of his services was marked by a most cordial vote of thanks, passed on the motion of a brother artist, Mr. GEORGE AITCHISON.

## THE SCIENCE AND PRACTICE OF VENTILATION.\*

By ROBERT BOYLE.

IT is often urged against automatic methods of ventilation that when ventilation is most required—*i.e.*, when there is no wind blowing and a perfect stillness is supposed to exist in the air—it is inoperative. Dr. PARKES meets this objection in a very conclusive manner. He says:—"In this country, and indeed in most countries, even comparative quiescence of the air is scarcely known. Air is called 'still' when it is really moving 1 or  $1\frac{1}{2}$  miles an hour. Incessant movement of the air is a law of nature. We have only to allow the air in our cities and dwellings to take share in this constant change, and ventilation will go on uninterruptedly without our care." Professor MACQUORN RANKIN, one of the very highest authorities on engineering, gives the following report as the result of careful and extended experiment:—"There is no time throughout the whole year but when there is a sufficient movement of the atmosphere at the level of the house-tops to cause the Air-pump ventilator to act." This has also been my own experience wherever the Air-pump ventilator has been applied, having always found a steady and constant up-draught and a plentiful supply of air passing through the inlets even during a dense fog or in the closest day in summer, when there was seemingly not a breath of air stirring. So satisfied is the firm of which the writer is a member that this is invariably the case, that we are always prepared to guarantee that it will be so wherever we apply our system of ventilation. The London Custom House is a striking instance of the failure of artificial and the success of automatic ventilation, that building being pronounced, since the Air-pump ventilators were applied, to be one of the best ventilated in London, whereas before it was notorious as being one of the worst.

Had my experience been different to what it has been, and I had found that automatic or natural ventilation was not to be depended upon for securing a constant change of air, at all times, and under all conditions of the weather, I would certainly have discarded it long ere this in favour of some more reliable method; but all my experience proves—and I believe it to be also the experience of those who have tried both systems—that automatic ventilation is in every way superior to any form of mechanical or artificial ventilation that is at present in existence. This opinion is based on fifteen years practical experience of almost every known system of ventilation in use at home and abroad, having specially studied the requirements of the climate of each country with the view of making myself practically acquainted with the value of the systems of ventilation in use. The past fifteen years have been devoted to the unremitting study of both the science and practice of ventilation, and how to achieve it in the simplest and most effective manner, and I have adopted the automatic, or natural mode of ventilation, as being the one which my experience went to prove was the best and most likely to answer the purpose, and at the same time, from its simplicity and economy, be capable of universal adoption. This selection is endorsed by Dr. A. SMITH in one of his papers on ventilation, in which he says:—"As it is evident that the greatest ingenuity and the most extravagant outlay are not of themselves sufficient to insure perfect and constant ventilation, we must look to natural means for effecting this purpose. We require some apparatus that is continuous in its action and self-acting in every part, so as not to need any attention after it has been once fixed. An examination of many forms of ventilators

has led me to the conclusion that the only apparatus that comes up to this standard of perfection are those manufactured by Messrs. BOYLE & SON, and termed by them 'Self-acting Air-pump Ventilators.' The thousands of public and private buildings which have been successfully ventilated by my firm in every quarter of the world, with the automatic system, after the failure in a large number of instances of almost every imaginable kind of mechanical and other forms of artificial ventilation, has fully demonstrated the correctness of the principle adopted and adhered to.

There are several forms of ventilators introduced which rely for their action upon the aid of water, but they are not only very liable to disarrangement, but those where water is employed to create a suction, and through which the air has to pass, instead of being beneficial are positively injurious to health, owing to the excessive amount of moisture which is taken up by the air and forced into the room. Standing close to one of these appliances, the moisture absorbed by the incoming air can be distinctly felt falling upon the face in the form of a fine spray, and a handkerchief placed over the mouth of the ventilator will be thoroughly saturated in a very short time. The effect of this in a hot room may be imagined, and in a cold room the result will certainly be anything but agreeable, to say nothing of the damage done to the contents of the room by the action of the damp air. When heating arrangements are used in conjunction with these water-power ventilators the result is a hot steamy atmosphere, causing that disagreeable "stewy" feeling which is always experienced whenever there is an excessive amount of moisture in a heated atmosphere. The climate of this country is of itself, alas! much too damp as it is for perfect comfort and health, without our voluntarily seeking to render the air we breathe and are surrounded with in our homes and halls more so by employing artificial means to effect this. Every sensible person will admit that any system of ventilation which tends to make the atmosphere of a building damp cannot be too strongly condemned, as pernicious in principle, injurious to health, and destructive to personal comfort. This is not, however, to be taken as applying to the process which has long been in use of washing the air by causing it to pass through a series of jets of water, which is a very different thing, there being not anything like the same danger of absorption of moisture by the air as when it is passed through a fine spray. Even allowing that these water ventilators had not the fault described, there are the great barriers to their general adoption, the expense of applying them and keeping them in action, and also the attention that is necessary to regulate them, which attention, as a matter of course, as all experience has proved, is never given, the result being that the ventilation is irregular and very often nil, and in time the apparatus gets out of order and is finally neglected altogether. "The difficulty of overseeing a complex apparatus is another source of imperfect ventilation in large houses" (BUCK). "The disadvantages are the great cost, the chances of the engine breaking down, and some difficulties in distribution" (PARKES). "Revolving fans, driven by water, and all other ventilators having movable parts, are not to be recommended, owing to their liability to get out of order and break down" (Professor CORFIELD). Drs. THOMPSON and STEELE (Guy's Hospital), in their "Dictionary of Domestic Medicine and Surgery," say:—"Occasionally pumps and fanners worked by steam machinery are employed for the purpose of admission and extraction of the air; but, although this method of ventilation has many advocates abroad, its trials in this country have not been particularly successful." Referring to the Air-pump ventilator, these gentlemen say:—"There can be small doubt of the efficiency of this contrivance." Dr. REID, than whom no higher authority on the subject can be quoted, in giving his opinion on the relative values of natural *versus* artificial ventilation, says:—"For all ordinary purposes the natural method of ventilation will be found most eligible. . . . On the whole, then, it may be concluded that, for a large proportion of ventilating purposes, the best mode of proceeding is to take advantage of the natural movements developed in the greater number of cases in the vitiated air by heat for securing its discharge, assisting its exit by the force of such wind as may exist by the form given to the external aperture." "In

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temperate climates, in most cases, natural ventilation is the best" (PARKES). Carefully-conducted experiments have proved that with a proper arrangement of ordinary inlet-tubes and suitable extractors on the roof a sufficiency of air for all the requirements of ventilation passes into a room without the aid of any mechanical or artificial contrivances to force it in—the use of which, instead of being an advantage, is exactly the reverse, as will be shown further on. GALTON observes:—"The simplest way of obtaining a change of air in a room is to take advantage of the movement in the air produced by a change of temperature or the action of the winds. Wherever there is an outlet and an inlet in a room this system will operate."

It will be found by any one who chooses to make the experiment that the amount of work actually done by artificial ventilators is more imaginary than real, as a considerable portion of the air that passes in through them is not due to their action at all, but to the natural pressure of the external atmosphere. This is a fact very easy of demonstration, as we have only to turn off the water, steam, or whatever power may be used, and allow the pressure of the outer air to assert itself—which, as a rule, it will be found to do in a manner that will probably be a surprise to many who have put their faith in the value of artificial propulsion. As the result of General MORIN's experiments, instituted to test the comparative values of natural and artificial methods of ventilation, and which experiments extended over nearly a lifetime, he states:—"Much of the movement ascribed to the fan is really owing to natural ventilation;" and, referring to the power of the steam jet as a ventilating medium, he says:—"This method of propelling air is not advantageous." Where water is employed as the propelling power, the force, of course, would be infinitely weaker than with the above-mentioned appliances, and the amount of air really put in motion by its action very small indeed. In making comparative tests care should be taken that the inlet openings of the artificial ventilators communicate with the outer air, so as to be subject to the pressure of the external atmosphere, otherwise the tests will be inconclusive and valueless.

Vertical tubes or brackets are the best forms of admitting air, which is introduced into the room in ascending columns, and assists to force out the vitiated air whilst diffusing itself throughout the room. In making provision for the admission of air it is absolutely essential, to secure proper and equal ventilation, that the inlets should be of small size and well distributed round the walls at short distances from each other. By thus reducing the size of the inlets and increasing their number, the more perfect will the ventilation be, whilst the chance of draughts will be reduced to a minimum. It is a fatal mistake to admit air into a large building, such as a church or hall, from one or two points only, and at a high velocity. Where this is done, those sitting in the vicinity of the inlets have a great deal more air than they find either comfortable or desirable, whilst those in the other parts of the building, and out of the direct range of the incoming currents of air, are stifled for want of it. This is the common experience wherever this method of admitting air is adopted, and it is also the cause of the seemingly inconsistent complaints which are so often made respecting the ventilation of a building, where one person complains of insufferable draughts and another of the stagnant and stifling atmosphere. Air should never be forced into a building at a high velocity, but should pass in slowly, so as to permit of its proper diffusion, and also to avoid draughts. Where it is otherwise admitted the object in view is defeated, as it passes through the room in a compact body and out at the exits, without effecting anything more than the feeling of a disagreeable draught by those unfortunate enough to be in the line of it.

It may, therefore, be looked upon as not only a waste of money, but an unwise action as well, to employ any form of mechanical or other artificial arrangement, such as fans or water-power ventilators, to provide a supply of air, when experience has proved that wherever they have been employed failure has invariably resulted.

MR. ERNEST TURNER, F.R.I.B.A., in one of his works entitled "Hints to Householders," &c., describing the action of these water-power ventilators, says:—"A curious illustration of this has been furnished at the Reform Club, where a

ventilator worked by water had been newly put up in the smoking-room. But instead of driving out the smoke, the concentrated current from the new machine simply shouldered it out of the way, and, cutting a little tunnel straight to the opposite outlet, took possession of that outlet for its own exclusive benefit, the net result being that the smoke, which before escaped but imperfectly, now escaped not at all. And the too single-minded apparatus had to be incessantly removed." All ventilating appliances which artificially force air into a building act in a precisely similar manner. DE CHAUMONT says:—"If the air enters at a high velocity it will make its way to the outlets without mixing." Whilst GALTON observes that "the velocity of the air, as it flows into a room, should not exceed one or at most two feet per second: firstly, in order to prevent a sensible draught being felt; and secondly, because a low velocity is favourable to the uniform diffusion of the incoming air through the room. The inflowing air should be directed towards the ceiling, and should be as much subdivided as possible by means of numerous orifices."

It may therefore be taken as correct that all that is requisite to secure the admission of a proper supply of air into a building is the use of a sufficient number of simple inlet-tubes judiciously distributed round the room. The cost of this plan is but a mere trifle as compared with that of the elaborate and expensive contrivances for forcing in air, and no after expense is incurred to keep it in action; nor can it get out of order like the other, nor fall into disuse through neglect and want of attention.

Where, however, artificial means are employed to assist in the ventilation of a building, they should always be used for the purposes of *extraction* only, and never for the admission of air. If the air is extracted out of a building, which can generally be done without discomfort to any one, an equivalent amount to that extracted will infallibly find its way in, and all we have got to do is to make provision as already described for its proper diffusion throughout the room. The highest authorities are agreed as to the advantage of this arrangement. GALTON says:—"Experience has shown that a system of propulsion does not act satisfactorily in this climate unless it is combined with a system for the extraction of the vitiated air. Under ordinary circumstances, where extraction is resorted to, an adequate quantity of fresh air can be drawn in by the operation of the extraction-shaft, without the additional expense and trouble of propulsion. . . . The best form of inlet to adopt is that which is simplest."

Heat, when employed as a ventilating medium, is useful under certain conditions, and if used in conjunction with other arrangements, but by itself it is not so efficacious as is generally supposed. It is the popular idea that a column of heated air in a shaft or flue always ascends, but this in reality is very far from being the case, more especially in the winter time, as the cold external air, through being so much heavier, forces itself down the shaft and presses the hot air along with it. If this were not found to be the case, where would be the necessity for providing the delicately-adjusted, self-acting valves which are usually fixed in the shafts of so-called ventilating sunlights, for the purpose of preventing the down-draught from blowing out or causing the lights to flicker? Very many instances could be here mentioned as illustrating the inefficiency of this mode of attempting to secure ventilation, but one or two cases will suffice. At the Rev. Dr. WALLACE's church, Glasgow, several rings of gas jets were fixed at the lower end of a shaft carried through the roof, and covered at the top with a cap to exclude rain. This arrangement was intended to ventilate the church by creating an up-draught and so drawing off the vitiated air; but when put in action and tested, it was found that instead of the hot air going up, the down-draught was so strong that a number of jets were being continually blown out, and when a lighted taper was introduced into the shaft it was likewise blown out; flocks of cotton-wool were also driven right down into the church, the down-draught being so strong. The Western Infirmary, Glasgow, is ventilated by means of hot-water coils placed in shafts communicating with louvred turrets on the roof, in which are placed hot-water cylinders. On testing this system directly above the cylinders a strong down-draught was experienced, flocks of cotton-wool being driven with considerable force down the shaft. At no time during



the experiments was there any abatement in the down-draught, or the slightest tendency to an up-draught. Now, in neither of these cases need this down-draught have existed at all, as by placing a reliable extracting ventilator, such as the Air-pump ventilator, on the tops of the shafts, the pressure of the cold, external air would have been removed and a continuous up-draught insured. A striking instance of this occurred at the Guildhall, London. The extraction-shafts there were provided with a series of rings of powerful gas jets for the purpose of creating an upward current; but instead of doing so the down-draught was found to be so great that the shafts had all to be incessantly stopped up.

On the application, however, of Air-pump ventilators to the tops of these shafts the down-draught at once ceased, and a powerful and continuous up-draught was established and maintained even on the muggiest and closest days. What may seem a remarkable thing to those who believe in ventilation by heat alone is, that when experiments were being conducted in the presence of a distinguished body of scientists, the gas jets when lighted were found not to add to the up-draught in the slightest degree, the anemometers registering the same quantity of air extracted by the Air-pump ventilators when the burners were not lighted as when they were.

It would be interesting to know how the gentlemen who were responsible for what is known as the "Kew Farce" could reconcile their theory of a plain open pipe being superior to all forms of roof ventilators, with the foregoing facts, when, even with the assistance of heat, their pet "open pipe" produced nothing but a down-draught, which, I think, even they will allow is not a very comfortable or desirable mode of ventilation. Dr. PARKES—than whom we have no higher authority on the subject—in stating the cause of the general failure of ventilating pipes open at the top, and unprotected by a properly-constructed ventilator to create an up-draught and prevent a blow-down, says:—"The wind may impede ventilation by obstructing the exit of the air from any particular opening, or by blowing down a chimney or tube. This is, in fact, the reason of the failure of so many systems of ventilation." GALTON also says, referring to open pipes:—"In consequence of the numerous causes of disturbance enumerated above, this method of extraction, when applied to a house, could not be relied on to act on all occasions with certainty as an extraction shaft." It is a universal experience that wherever an open pipe, or one with merely a cap on the top to prevent rain getting in, is used for the purpose of ventilation, a down-draught is the invariable result; and how, in the face of this, any one can be found, in this enlightened age, to assert that a simple open pipe is the best form of ventilation almost passes comprehension. If open pipes really answered the purpose, how is it that, wherever they are used, they are found as a rule to be stopped up? And if extraction ventilators were not found to be necessary, how is it that scientific and practical men have busied themselves for ages devising them? One might go on *ad infinitum* quoting instances of the failure of heat and open pipes when used as ventilating mediums, but I will merely refer to the official report submitted by Mr. ADAM LEE, in 1813, to a Committee of the House of Lords on the system of ventilation applied to the House by Sir HUMPHRY DAVY, in which he (Sir HUMPHRY) employed and relied upon the agency of heat to secure an exhaust. In this report the following significant passages occur:—"I have found on a very crowded night of business that it was impossible by means of the present ventilators to draw off the heated air. . . . I consider the fire to the ventilators as unnecessary. . . . I have at various times taken an opportunity of going on the top of the House, and have put my head over the ventilation pipe when the fire was at full heat, and have not perceived the hot air coming from the House." Now what does this prove but that there must have been a strong down-draught in the shaft, as in the other cases cited? otherwise Mr. LEE would have been certain to have felt at least the hot air arising from the furnace.

Heat was employed to extract the foul air from the House of Parliament, Melbourne, Australia, but it proved a failure, and had to be supplanted by the Air-pump ventilators, with, it may be stated, the most satisfactory results. Gas-jets may occasionally be used with advantage in external

shafts and air-flues, fitted on the top with exhaust ventilators, for the purpose of rarefying the column of air in cold weather, which otherwise might be liable to condense through the action of the external atmosphere on the shafts. An outer casing with the space between packed with sawdust will answer equally as well, and is in the end perhaps the cheapest and least troublesome plan.

### VICTOR HUGO AS AN ARTIST.

THE following is a translation of the discourse which was delivered in the Panthéon at the funeral of Victor Hugo by M. Guillaume, the sculptor, who had been elected to represent the Society of French Artists on the occasion:—

The great poet for whom we appear in mourning was an incomparable artist. The artists of France could not therefore fail to bear a part in the solemn homage which is to day rendered to him. They feel proud that they can claim kinship with Victor Hugo, for if he has expressed the thoughts and aspirations of his own age, if he has recalled the past and gazed with prophetic vision on the future, he has likewise given to his work a character through which it becomes related to all the arts. In Victor Hugo art was closely united with poetry.

There are two modes of inspiration, and the difference between them is very slight. Poetry, being fertile in expressive images, can create representations which are full of life. But it is not always necessary to have the materials which will give them forms that will be apparent to the senses. In poetry it is spirit which appeals to spirit. Nevertheless, the poet is at times able to give a quality to his creations by which they correspond with the figures that are produced by painters and sculptors. Then it is they appear to have a sort of reality for us. We believe that we must have seen them somewhere, and the memory of them remains with us as if they were beings whom we had once known.

Among all the poets Victor Hugo had the strongest faculty for the creation of what may be called plastic illusions. How vast a multitude of examples could be cited of his necromancy? In describing the doomed cities in his "Orientales," Victor Hugo would appear to have been some great architect, for archæology can find nothing to correct in his pictures, and indeed he anticipated many of the results of modern exploration. In respect of all things he was possessed of the poet's divination. In his early days he restored Mediæval times for us in his "Odes et Ballades," and somewhat later in his "Notre Dame de Paris." A fervid admirer of the national architecture of France, he was able to make other people also love it, and organise a public department for its conservation.

Where is the sculptor who has carved the figures of gods and heroes, of men and nations, with more energy and precision than Victor Hugo? He writes a few words, and they are enough to render all the phenomena of form visible to our eyes. This could not be done without many strokes of the chisel. Three verses suffice to represent the career of Napoleon. Exact observation, historic truth, a sentiment of art are condensed in them. The art of the sculptor is surpassed. How many other images have issued from his mind—some which are isolated and massive as blocks of granite, others which seem to be cast in bronze, and almost overcome us with their power!

He was no less a painter, in the variety and richness of his forms and in his sense of colour. Every one who has read his "Légende des Siècles" will remember the first poem, "Le Satyre," which fascinates while it dazzles with its colour and light. And it should be remembered that his ardent study of nature was not of the outside only, but was no less profound than that of the man of science. In this union of poetry and science we have an example by which future ages, as well as our own, may well be guided.

But what shall I say of the harmony of his poems and of the variety of movement in them? With Victor Hugo rhythm always follows sentiment. It corresponds with the thought, whether it be serious or gay, whether lively or depressed, whether sustained as in a symphony from nature, or abrupt as in a dialogue or a lament, or solemn as in a philosophic meditation. What music is in his poetry! Even if we take no account of the sense of the words, they lull or exalt the mind by the melody of the sounds and of the versification.



Yes, Victor Hugo was a great artist, a perfect artist, the grandest of all in our age. In his works he has recognised that unity of art which was an ancient faith. He was in unison with all forms of human action—they vibrated in him and he became their interpreter. The crayon was always in his hand, and his designs are inimitable. But his greatest glory, like that of the sublime poets, will be in the inspiration drawn from his books. His works, like those of Homer and Dante, are a school. Admiration is productive, and we can all draw great thoughts from them. It was from a verse of Homer that Phidias derived his idea of the Olympian Jove. Sculptors can obtain suggestions from the lines of Victor Hugo for noble figures, worthy of being embodied in the most precious materials. I seem to see upon his tomb the images of the virtues which gave inspiration to his genius, namely, Justice and Pity.

No funeral has been more magnificent, more imposing, more triumphal. We have had in our midst a genius that was without equal. Honour to him! Honour to the poet who has given a character of universality to his works! Glory to the master who was a sovereign in art and form, who has in his poetry given an intellectual representation of all the arts! The French artists on this memorable day, which is consecrated to his apotheosis, desire to place a golden laurel on his bier.

### CHURCH RESTORATION.

AT the annual meeting of the Durham and Northumberland Archæological Society in the city of Durham, the Rev. W. Greenwell, F.S.A., president, made an address, in the course of which he made some remarks on various buildings visited by the society during the past year, in which he expressed his views in regard to restoration and architectural treatment. Speaking of Corbridge Church, he said that structure had been restored, and restored on the whole remarkably well. It was not restored by an architect. He did not mean to infer that an architect could not restore a church, but he was afraid that very often they more than restored it—they did a great deal in the way of destruction. He could not tell why it was, but it seemed to him that the architects of the present day seemed to have a great desire to interfere with the works of their predecessors. They had evidences of this not only in their own county, but also in other parts of the country. Those who had restored the church at Corbridge had endeavoured as far as possible to preserve the ancient features of the building. The church was one of considerable interest, especially the tower, which was probably built before the time of the Norman Conquest. It was one of a class of towers of which we had a certain number in the county of Northumberland, and in the valley of the Tyne especially, and it was difficult indeed to say to what particular date they belonged. There was no question that they belonged to some time about the Conquest, and he was inclined to think they were built before that event took place. The architectural features implied a time somewhere between the year 1000 and 1066, a little before or a little later, and, from the reasons he had given, he thought the date before was to be preferred to the date of a little after. That class of tower was quite different from what they saw at Monkwearmouth, about which latter there was no question whatever that it was considerably antecedent to the time of the Conquest. They were of a different character from that, though they possessed somewhat similar characteristics. The towers at Lincoln presented many of the same features, and they knew that these towers were built certainly after the Conquest, but very soon after. At Haughton-le-Skerne they saw the church, which fortunately had not undergone restoration. It had been threatened with it at various times; in fact it might be said to have been threatened with destruction, but there was a difficulty in the way, and fortunately at present it was not likely to be destroyed. He did not think that as long as the present rector lived that anything would be done to it. The two days' meeting they had last year was one of the pleasantest they had for some years. But the place in which they had the most interest on that visit was Norham Castle, a place of great importance at all times. Situated at one of the most important points of the river Tweed, it was the only place which could be defended when the two countries were under separate monarchs. Therefore, it was one of the largest castles upon the borders, and a great deal of it had been left, especially the keep. The earliest part of the keep was built by Bishop Flambard, and later on it was altered by Bishop Pudsey. It was a question as to which part of the work had been done by one and which by the other. When they were there they were able to satisfy themselves on this point, but in absence from the place he could not explain it to them. The keep remained in its entirety, but the sur-

rounding buildings had been more or less destroyed, because wherever they had a place like that in the neighbourhood of a large village or small town, it was sure to be used as a quarry to obtain stones for building purposes. Norham Church was a very fine one, but had to a certain extent been detrimented by restorations which took place before so much was known of Mediæval architecture as now, and therefore some excuse could be made for what had been done. But what had been done lately had been well done, and he did not think anyone could say that the late restorations had destroyed anything. There were one or two matters to which he desired to refer, and the first was with regard to a place in the cathedral which had been locked up ever since the destruction of the chapter-house, and that was the prison of the monks for minor offences. The great prison of the monks was situated in the quadrangle, which is now called the college, and occupied the site of the house in which Canon Evans now lives. That was the great prison, but there was the minor prison where the monks were confined for slight offences, and it was a very wretched place, being a good deal worse than the black hole of prisons nowadays. Up to the time of the destruction of the chapter-house, the only entrance into that prison was through the chapter-house. When the chapter-house was rebuilt to a certain extent the prison was blocked up, and in doing so they destroyed the original doorway, which would have been of great interest in connection with the age of the prison. He was of opinion that it belonged to the earliest part of the cathedral, and was erected before the time of Bishop Rufus, who was said to have built the chapter-house. There was also another room, upon the walls of which there were some fresco paintings, the subjects of which could still be partly made out, and that also seemed to be contemporary with the earliest part of the cathedral. There was also a third and smaller chamber close to the others he had mentioned, and he was inclined to believe that they were erected at the time that Bishop Carleph was away in exile in Normandy. The President proceeded to refer to the destruction of ancient churches. Wherever they went they found that church after church was being destroyed, and if they continued to go on as they were doing there would not be a single old church left in England. Many of the churches were altered in the most ignorant fashion.

### SOCIETY OF ENGINEERS.

AT a meeting of the Society of Engineers, held on Monday evening, the 1st inst., at the Town Hall, Caxton Street, Westminster, Mr. Charles Gandon, president, in the chair, a paper was read by Mr. Henry Faija, on "Portland Cement."

The author said that, though much had been written on the subject, little was generally known, and contradictory conditions were often specified. He considered that the weight test was of little or no value to the purchaser, though it had a use for the manufacturer. Specifications should be as simple as possible, and the author advised the adoption of the ordinary quality of cement, obtaining the different strengths required by varying the proportion of sand or aggregate, in preference to specifying unusual qualities. The only points which need to be tested are fineness, tensile strength, soundness. After defining the degree of fineness which he considered most desirable, having regard on the one hand to strength, and on the other to economy, the author treated in detail the subject of testing. Experience showed that cements which set rapidly attain their full strength in a few months and have then a tendency to fall off, while a slow-setting cement continues to increase in strength for an indefinite period. The best practice is to test the briquettes at three days after moulding and again at seven days. At the former period they should not break under 175 lbs. strain, or at the latter under 350 lbs.

The author then showed and described a machine that he devised some years ago, and had successfully used since, for gauging cement; also a testing machine, specially arranged to give the most advantageous rate of speed in applying the pressure, which he found to be 100 lbs. per fifteen seconds. It was by no means safe to assume that, because a cement bore the required tensile tests, it was necessarily sound, and some cements were long in showing unsoundness, or "blowing." Means were therefore described by which this quality could be ascertained at as early a period as possible, by being artificially developed in an apparatus designed for that purpose.

A form of specification, founded on experience in these several respects, was then given, and the paper concluded with some reference to the chemical tests for purity, introduced in German practice by Dr. Fresenius, and with the author's testimony to the freedom of English cements from the adulteration against which these tests were intended to guard.

The Glasgow Town Council will give the sum of 2,500*l.* to the guarantee fund of the proposed international exhibition at Edinburgh in 1886.



## NOTES AND COMMENTS.

THE house belonging to the late WILLIAM BURGESS, in Melbury Road, Kensington, may be said to be unique. For many years he had been planning the erection of such a building, and designed furniture and plate long before the site was selected. He wished to demonstrate practically what his art could do in adapting Mediæval forms to modern needs. BURGESS was indifferent to the opinion of passers-by, and it is in the interior of the house that we see the realisation of his dream. Mr. PULLAN proposes to bring out a book in which the building and its contents will be amply illustrated. It will be of a large size, and contain forty photographs, many of them by Mr. BEDFORD, whose skill was appreciated by Mr. BURGESS. The plates will be accompanied by descriptions, and the binding of the volume, a design by BURGESS, will be utilised. The book will necessarily be costly, but there are enough admirers of the artist, besides public libraries and museums, to insure its success.

A COMMISSION has been constituted in connection with the French Société Centrales des Architectes, with the object of securing fair play in architectural competitions. As the results affect the artistic reputation of the country, the conditions of every competition should, it is affirmed, be of a nature to inspire confidence, and attract the largest number of competitors. The commission is composed of *ex-officio* members—MM. QUESTEL, HERMANT, LABROUSTE, and PAUL WALLON representing the Société Centrale; two associated members, viz., MM. ALPHAND and POULIN; and several elected members, including members of the Institute, architects to the Government, to the City of Paris, &c. All the members are in the foremost rank of the profession. The commission is prepared to give advice to administrations, societies, and municipalities on the preparation of conditions, selection of juries, awards, and prizes, and as the members are disinterested in their efforts for the public good, they appeal to the country for support.

AN account, entitled "Five Years' Municipal Work in Nottingham," has been published in a pamphlet form by Mr. ARTHUR BROWN, of the Institute of Civil Engineers, and borough surveyor of Nottingham. The intention of the writer has been to describe some of the more important municipal undertakings, and to summarise in a general way the work directly connected with his office, rather than to present a complete history of all the undertakings of the Corporation during the term of years. The matters treated of are placed under six heads, viz.:—1. Particulars of population, with special reference to the rate of increase; 2. Number of new buildings erected; 3. Roads and streets, including private street improvement works; 4. Storm-water culvert and general sewerage works; 5. Public street improvements; 6. A description of the pail-closet system]

THE information given under head No. 2 is remarkable. It states that it is estimated that during the five years ending March 31, 1885, there were built in Nottingham about 13,500 houses. The greatest number of houses that were built in one year was in 1883, when 3,302 houses were erected. In that year returns were obtained from twenty of the largest towns, and it was found by comparison that, having due consideration to its population, the building operations in this town were quite unprecedented. The number built in the borough in that year nearly equalled the number erected in Liverpool, Birmingham, Glasgow, and Leeds collectively; these four towns represented a population of 1,839,000, whereas Nottingham then had a population of 205,000 only. Taken at the low average cost of 150*l.* per house, the result would be upwards of 2,000,000*l.* as the amount spent on house-building operations in five years.

A COMMITTEE has been appointed, with M. VICTOR SCHËLCHER as president, for the purpose of raising subscriptions for the erection of a memorial to VICTOR HUGO in one of the public places of Paris. Among the vice-presidents is M. BONNAT, the portrait painter. The

space in the Louvre which has been appropriated to the Gambetta memorial has been enclosed by a very high hoarding, which is adorned by advertisements, some being painted in oil in order to endure until the timber is removed, while others are changed from day to day. The *bizarre* appearance of so prominent a piece of construction in the centre of the grounds diminishes the effect of the buildings of the Louvre, and it is surprising that the enclosure was not withheld from the advertising contractors and glaring posters. The committee have applied to the Government for the delivery from the stores at Cherbourg and Toulon of a number of cannon that will be sufficient for the casting of the figures. Forty-two pieces have been granted, which will weigh about 17 tons.

AUTOBIOGRAPHIES, as a rule, are seldom interesting reading. Mr. RUSKIN, in introducing the first chapter of his autobiography to the public, gives a useful hint to writers of autobiographies in his preface to the work, where he says:—"I have written these outlines of scenes and thought in my past life ('Præterita') frankly, garrulously, and at ease, speaking of what it gives me joy to remember, at any length I like—sometimes very carefully of what I think it may be useful for others to know, and passing in total silence things which I have no pleasure in reviewing, and which the reader would find no help in the account of."

THE report of the Consul on public works at Suez is short and suggestive. Under the head of public works he says:—"In this respect nothing has been done; not even has an attempt been made to repair the walls of the basin, or to prevent them from falling in. The docks are now used almost exclusively by Her Majesty's ships and transports, and the steamers of the Khedivial Steam Navigation Company. The postal steamers no longer go there, the Peninsular and Oriental Company having at last realised the fact that there was more risk than profit in bringing their vessels into the docks at Port Ibrahim.

THE final award in the competition for the proposed New Exchange, Amsterdam, took place last week. The first prize of 10,000 gulden was awarded to the design bearing the motto "V." No. 175, its author being M. CORDONNIER, of Lille. The second prize of 6,000 gulden to the author of "In hoc signo floresco," No. 150, M. GROLL, of London and Vienna. The third prize of 5,000 gulden to "La bourse ou la vie," No. 20, M. VOLKMAAR, of Berlin. The fourth prize of 4,000 gulden to "Mercatura," No. 73, Messrs. SANDERS & BERLAGE, of Amsterdam. The fifth prize of 3,000 gulden to "Ammerack," No. 91, the name of the author not having transpired.

A CUP and bowl of Samian ware, among other fictile fragments of Roman-Winchester, have lately been dug out on the site of the Star Inn, Winchester, where a fine structure, designed by Mr. T. STOPHER, of Winchester, is to be erected for Mr. G. POINTER. The bowl is described as almost as capacious as a modern salad bowl, and, although perhaps nearly eighteen centuries have passed away since it was made, its lustrous colour and vigorous ornamentation remain as fresh as ever. Rising from a small circular base, the bowl swells upwards from a decorated double circle into a series of twelve subjects, arranged in alternate circles and double panels, the figures in the latter being divided by a dotted line. In each circle is a vigorous and artistic figure of a gladiator or soldier, armed with sword and shield, and either attacking some one or defending himself. The panels are occupied by standing figures of HERCULES, with his club, and APOLLO, with a suppliant figure at his feet, whilst over his head are a bird and a cup, perhaps, and the latter is on the Herculean panel. There are various details of eight-leaved flowers, an ornament like an acanthus leaf somewhat, and with tendrils to it, and the series of subjects is surmounted with a circle of dots and a rich cornice, or edge, of the egg and tongue pattern, and about 2 inches over this is a fine moulded edge or lip, the composition being such as would command attention anywhere by its beauty.













*The Arts: The Engraver.*

*By H. F. Schumann.*





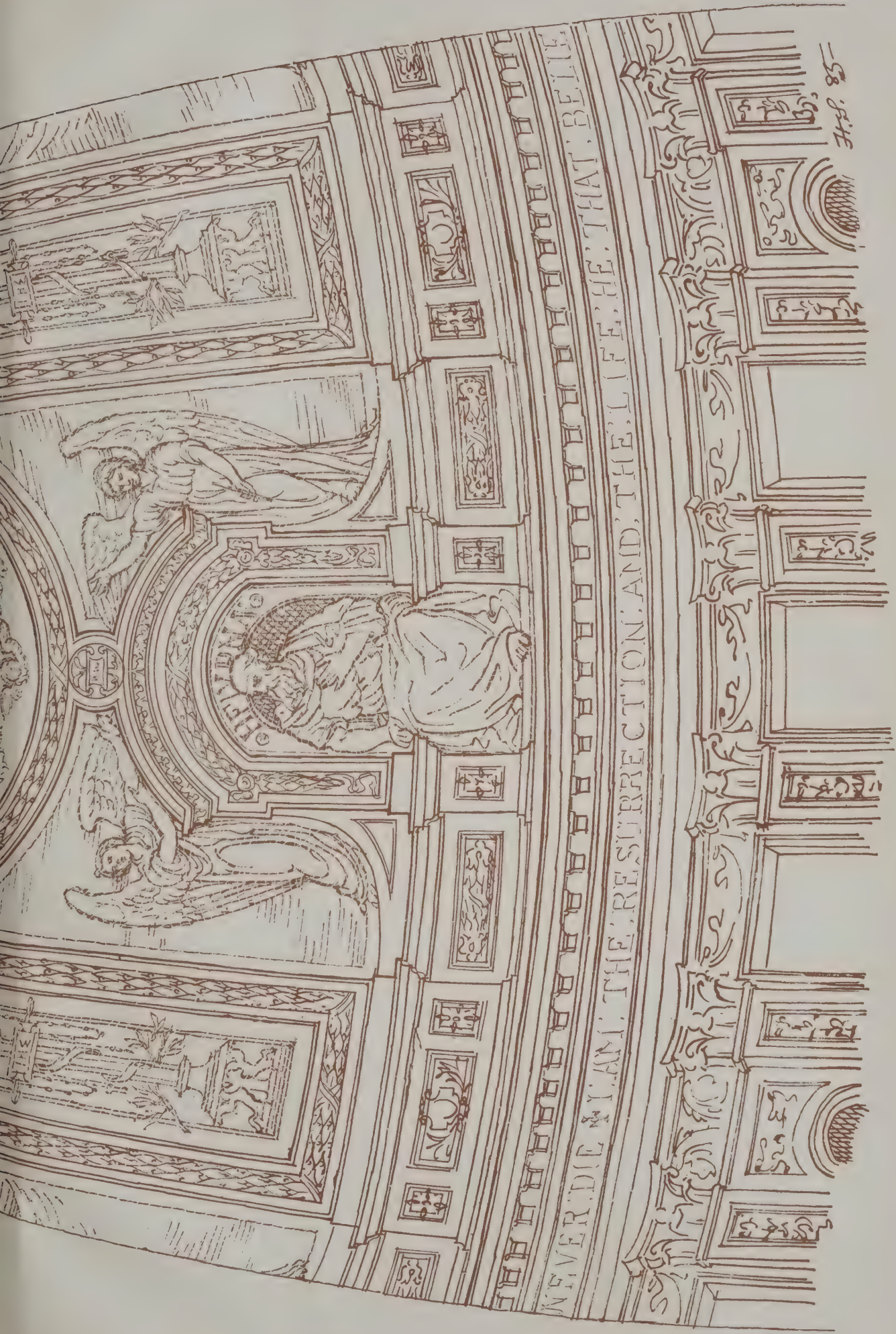












ST. PAUL'S CATHEDRAL, LONDON: DESIGN FOR TREATMENT OF CUPOLA.

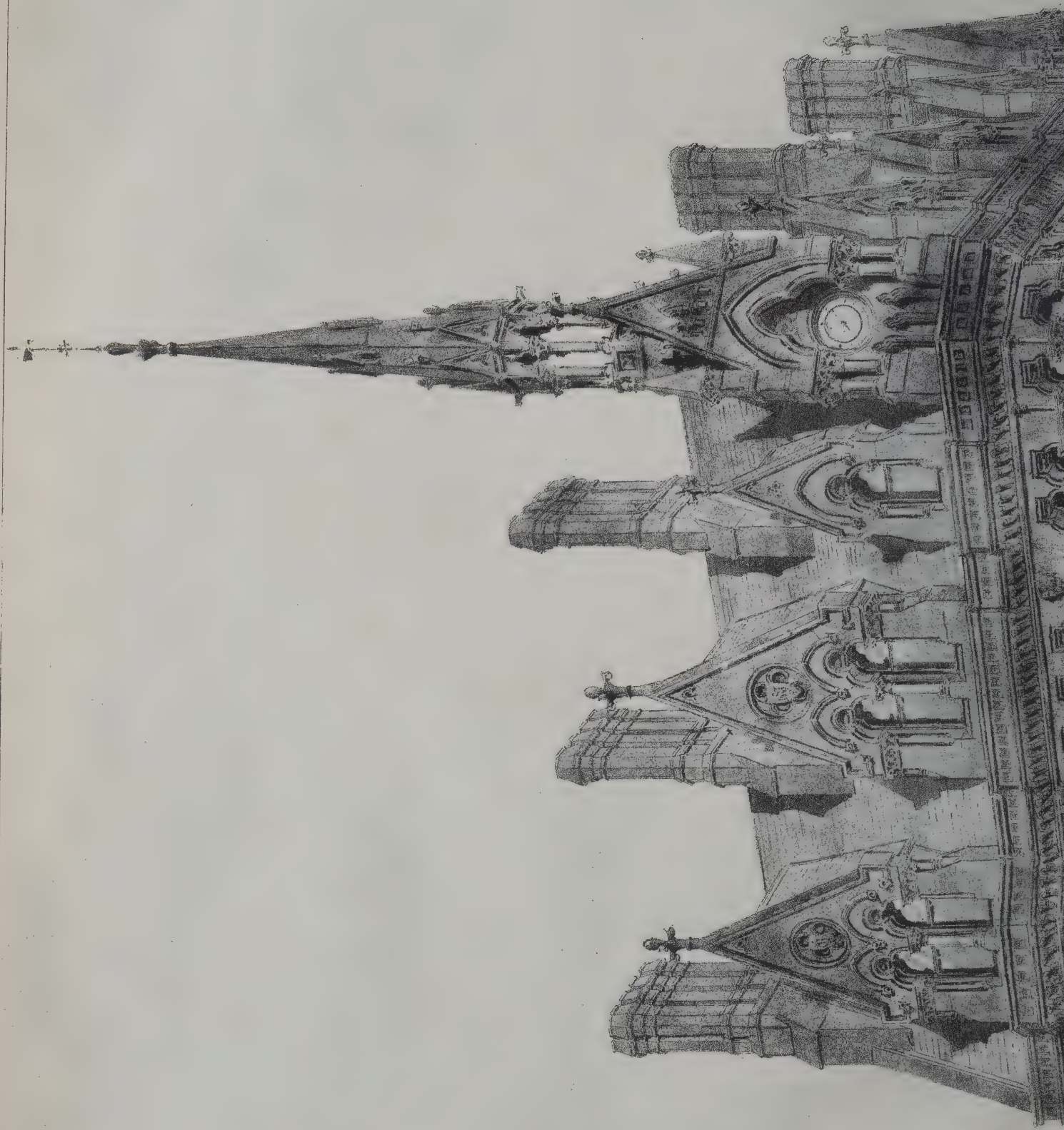




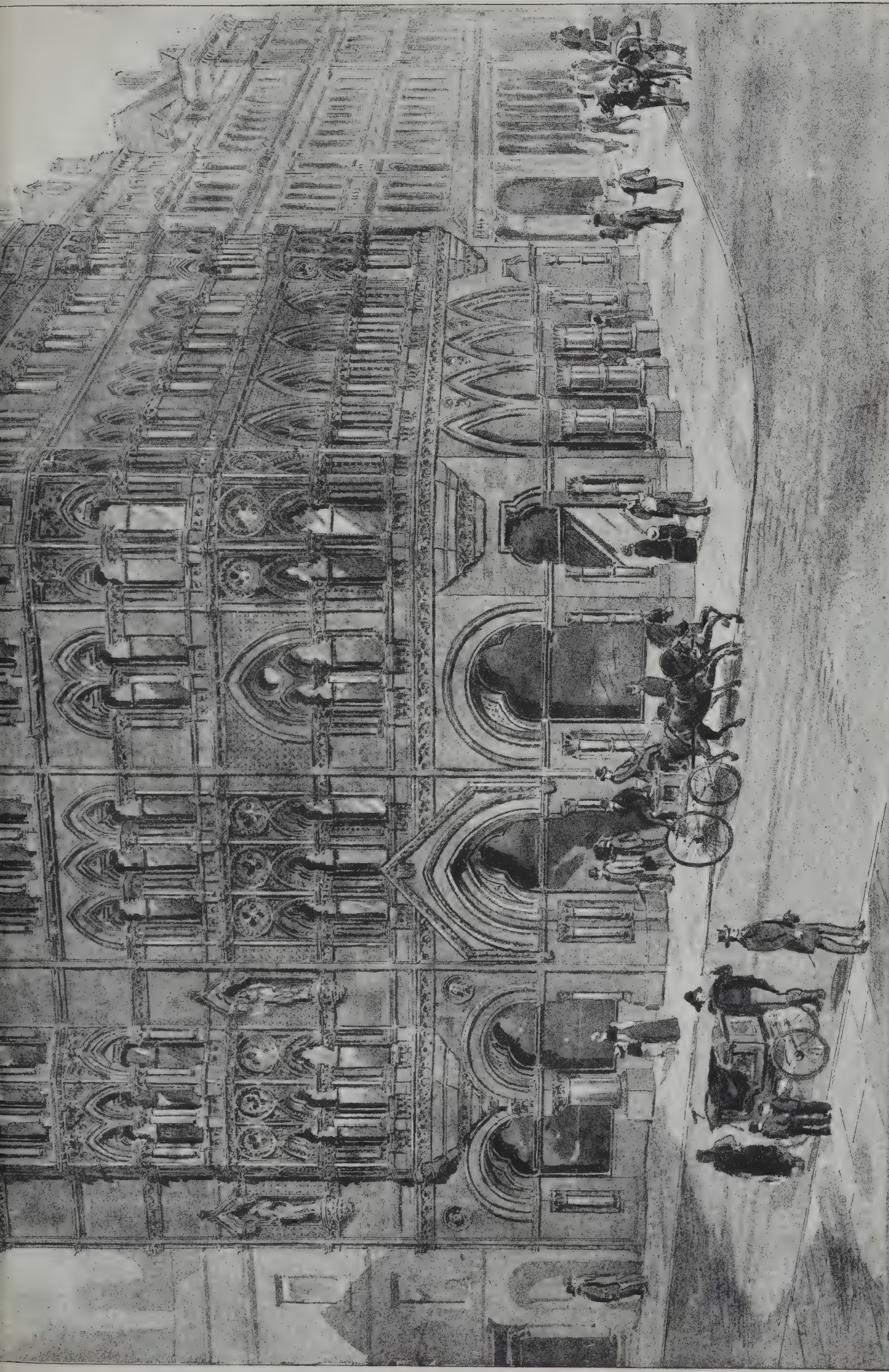












The Cobden Coffee House Extension. William Doubleday, Architect.







## ILLUSTRATIONS.

THE ARTS: THE ENGRAVER.

THIS illustration is the fourth of the series by M. EHLMANN.

## DECORATION OF ST. PAUL'S CATHEDRAL.

THE cartoons now in the cupola at St. Paul's are to be removed, pursuant to a resolution of the committee, in a few days. Neither of these versions of STEVENS' design has been approved of by them; and they will shortly decide whether any other treatment (architectural or otherwise) be more promising, whether the existing monochromes by THORNHILL be painted over with fancy colours, or whether the question be again postponed *sine die*.

Before leaving the subject it is interesting to note how, among the various opinions expressed, those adverse to my version by several distinguished Gothic architects have been as remarkable for their unanimity in objection—in a Classic subject—as for the diversity of their individual prescriptions.

Further, I would wish to place on record the manner in which I would interpret STEVENS' sketch with the experience gained by seeing the full-sized experiment *in situ*; and I submit the accompanying rough sketch. Both the version by Mr. E. J. POYNTER, R.A., and that by myself were based on STEVENS' grand design, containing two cycles of storiatio—an upper row of circles about 10 feet, and a lower row about 20 feet in diameter. After much consideration, it appears to me that *one* tier of storiated circles would be better; and hence the upper row is omitted in the sketch, and is replaced by small panels with angels of the same size and value as those in the articulating-ribs, with some necessary readjustments of sizes in the ribs, the sitting figures, and the belt of the adorning throning round the eye of the cupola.

I have suggested that the *Resurrection* would be better for the storiatio, as furnishing simpler and more "readable" subjects for the painter. I explained this fully in my paper published in the Institute Transactions at the beginning of the year, to which I would beg to refer; and the rest of the sketch may be left to explain itself.

HUGH STANNUS.

## THE COBDEN HOTEL, BIRMINGHAM.

THIS building was opened on the 29th ult. by the Mayor. It is the extension of the Birmingham Coffee-house Company's premises in Corporation Street, making the Cherry Street elevation equal to the front in Corporation Street, thus greatly enhancing the effect of this fine building. The entrance to the new Cobden Hotel is in Cherry Street. A lofty doorway gives entrance to a hall, paved and decorated with Minton tiles, and leading to staircase and passenger lift, and commercial-room, office, &c. Proceeding first by wide and easy stairs to the basement, there is a spacious vestibule connecting the old and new portions of the building, the coffee-room being on the left and the new smoke-room on the right. This is a splendid room, nearly 50 feet long by 20 feet wide. The walls are lined throughout with specially designed tiles, executed by MINTON, HOLLINS & Co. The columns are of polished granite, with richly-carved capitals of Caen stone, and the pilasters and arches are lined with marble of varied hue. The handsome mahogany buffet is relieved with majolica panels of glowing colour. A serving-room is behind the bar, and a lavatory, &c., are entered from the further end of the smoke-room. The lighting and ventilation have been specially provided for. No better lighted basement can be met with in the town. On the ground floor is the commercial room, 33 feet long, with cloak-room, lavatory, &c., adjoining. A hydraulic passenger-lift, manufactured and fixed by CLARK, BUNNETT & Co., of Rathbone Place, London, with porter in constant attendance, will traverse the total height of about 80 feet, and give visitors free access to the 120 rooms on the upper floors. Ascending to the first floor, one passes a well fitted service-room, and enters the grand coffee-room, 36 feet by 20 feet extreme size—a lofty and well-lighted apartment, with two handsome

marble chimney-pieces. The buffet in this room is adorned by a marble bust of RICHARD COBDEN, and the commercial-room by a bust of JOHN BRIGHT. The effect of the walls, which are lined with beautiful patterns of Lincrusta-Walton, is soft and pleasing. There is a large billiard-room on the second floor, with a good table. The lighting of all these rooms is by the "Bower" patent light, which gives a bright, steady flame, and, by carrying off the products of combustion from each burner by a special flue, keeps the air pure. The ventilation is by exhaust and inlet shafts, of large size, traversing the height of the building from roof to basement. The top floor of the hotel is devoted to kitchen, scullery, stores, larder, &c., laundry and steam drying-room, and servants' department generally. The bulk of the bedrooms extend on two floors over the long new range of shops in Corporation Street. They are supplied with lavatory, bathroom, and other accommodation, and an extra staircase, for use in case of fire, gives exit to the passage adjoining the North-Western Arcade. There are electric bells to all bedrooms. Externally, the building, which is Gothic, with detail somewhat French in character, continues and completes the façade of the Cobden Coffee-house. The chief features of the front in Cherry Street are a lofty oriel, three storeys high; on either side are niches, with sculptured figures representing *Prudence* and *Temperance*. Above the doorway is a bold gable. The front is of stone, with granite shafts from Aberdeen. All the principal furniture throughout the building has been designed by the architect, Mr. WILLIAM DOUBLEDAY, of Colmore Row, Birmingham. The furniture is by MARRIS & NORTON and CHAMBERLAIN, KING & JONES. The builder is Mr. JAMES MOFFAT, of Camp Hill. When completed, the whole building, with its furniture, will have cost upwards of 20,000*l*. This addition to the work of the Coffee-house Company will supply a long-felt want for a first-class temperance hotel.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE twelfth and last ordinary meeting of the session of the Royal Institute was held on Monday evening, Mr. Ewan Christian, president, in the chair.

The decease of M. Ballu, honorary corresponding member of the Institute, was announced.

Various donations were announced, and a vote of thanks passed to the donors.

Professor KERR submitted a proposal for conducting the higher operations of the Institute by means of four standing committees, to take charge respectively of four departments:—1st, art, or the province of architectural taste; 2nd, science, or the philosophy of building; 3rd, literature; and 4th, business, meaning the miscellaneous field of architectural practice; and asked that the Council would appoint a special committee to consider the question during the recess.

The PRESIDENT said that would be done.

## The Royal Gold Medal.

The PRESIDENT: Dr. Schliemann.—The medal which I am to have the honour of presenting to you this evening is the highest distinction in the power of the Royal Institute of British Architects to bestow. It is given by our patron, the Queen, but Her Majesty entrusts to us the task, sometimes a very difficult one, of deciding, subject to the Queen's final approval, on the man most worthy to receive it. I say that it is sometimes a difficult task, not from paucity of men, but rather the contrary, because this Institute, having always taken, as I think wisely, a catholic view of its responsibility, has included within its scope of vision not only architects, archæologists, and men of science at home, of whom there is no lack, but has also looked widely abroad, and invited to share with their brethren here of like pursuits with themselves the noblest and best amongst the learned men on the Continent of Europe. In the roll of gold medallists will be found the honoured names of men of Italy, of France, and of Germany—great architects, learned writers, and archæologists; and this Institute is proud to associate with that of the great Assyrian explorer, Austen Henry Layard, the now world-renowned name of Henry Schliemann. In you, sir, this Institute recognises not only the indomitable explorer, but the earnest student of the arts of past ages, one whose youthful imagination having been fired by the grand story of the great poet of antiquity has shown so powerfully that noble enthusiasm which "scorns delight and lives laborious days," that dogged pertinacity so delightful to all true Englishmen, which, having once fixed the mind on the performance of an arduous task, never wearies until it has been finally accom-



plished. Few things that I have read of late years have interested me more keenly than the simple tale of early struggles in the pursuit of knowledge under difficulties which you, sir, have given so freely to the world: a history of obstacles met only to be vanquished, of determination to learn, under all circumstances, however disadvantageous, everything that could aid you in attaining what you have made the object of your life, the solution of the long-vexed question as to the existence and position of ancient Troy. It is a story such as in these days of luxury and self-indulgence deserves, for the admonition of our youth, to be written in letters of gold, one that would teach them, if anything would, that success to be real must be the product of resolute hard work, and that nothing is denied to well-directed labour. That indefatigable industry such as yours, employed in the pursuit of commercial enterprise, should result in the acquisition of wealth is no uncommon thing; but that that wealth, so laboriously and honourably obtained, should without stint be freely expended on the realisation of the early aspirations of enthusiastic youth is a very rare and noble thing, and a most valuable lesson to all who are wise enough to ponder or have the generosity to practise it. I will not venture to detain you, sir, or this meeting, by speaking in detail of the great work you have been able to accomplish towards settling the controversy to which I have already alluded, which has so long occupied the minds of many learned men, like yourself Homeric enthusiasts; a controversy resulting in conflicts almost as dire as those we read of between the Greeks and Trojans of old. Your labours in this direction, and in the discovery of the Homeric tombs at Mycenæ, with the wealth of gold and bronze ornaments which were then brought to light, and your exploration of the remains of the Treasury of Orchomenos, have added a new chapter to the artistic history of Greece, the full value of which has perhaps not even yet been realised by archæologists, but the importance of which can hardly be overrated. Of your labours at Tiryns, and the discovery within the circuit of its well-known and long-celebrated Cyclopean walls, of the pre-historic palace, possibly older than anything at Mycenæ or Troy, but still retaining its wall-paintings and decoration, we know enough to make us look forward with lively interest to the publication of your forthcoming work, which we cannot but believe will add to the fame you have already acquired as one of the most liberal, undaunted, and successful labourers in the investigation of the unrevealed history of the past which this century has produced. Sir, I congratulate you very truly and heartily on the success you have attained, and with all humility, and yet with pride, rejoice to be the medium of presenting you with this medal, the well-earned acknowledgment of the distinction you have so honourably acquired by your disinterested labours.

Dr. SCHLIEHMANN: Mr. President and Gentlemen,—I receive with the highest possible gratitude the royal gold medal, and I am exceedingly proud of receiving it the more so as it is conferred on me by Her Majesty the Queen, at the solicitation of the Royal Institute of British Architects, because this most distinguished body eight years ago did me the high honour to elect me an honorary corresponding member. I felt at the time that this high distinction was quite undeserved; nevertheless, I felt very much flattered by it, and I have ever since done everything in my power to show myself worthy of it. Not being able to accomplish this by new inventions in modern architecture, which British genius has brought to the highest pitch of perfection and excellence, I thought I could not do better than use my pickaxe and shovel and make discoveries of architecture of the Heroic age, and solve the architectural problems which have puzzled the wisest of the wise among archæologists in all ages. In fact, our knowledge of prehistoric architecture was very deficient. All we had was the account of Homer, whose scanty information of the construction and the internal arrangements of the Homeric palaces we do not understand. I venture to hope that my excavations of the old historic palace of the former kings of Tiryns and the galleries in the walls, with their series of eleven ogival-like chambers, and the three other chambers we have lately discovered in the tower, will contribute greatly to explain to us the Homeric descriptions. I beg you to receive once more the expression of my profoundest gratitude.

#### Medals and Prizes.

The President distributed the prizes as follows:—

*The Pugin Travelling Studentship.*—The medal and the sum of 50*l.* was awarded to Mr. William Henry Bidlake, who would receive the same on his return from his tour, and after depositing his sketches, &c., made during that tour. The same remark held good in the case of the holder of the Godwin Bursary, Mr. John Bradshaw Gass. A medal of merit was next awarded to Mr. Herbert Osborn Cresswell, and a medal of merit to Mr. Thomas Maclaren.

*The Soane Medallion* (with 50*l.* to be afterwards paid under the usual conditions) was awarded to Mr. Arnold Bidlake Mitchell, a medal of merit to Mr. Alfred Arthur Cox, and also a medal of merit to Mr. John Thomson.

*The Tite Prize of Thirty Pounds and a Certificate* was awarded to Mr. John Archibald Campbell.

*The Institute Medal and Ten Guineas* for measured drawings was awarded to Mr. Ernest Albert Coxhead, a medal of merit and 10 guineas to Mr. James Cromar Watt, a medal of merit to Mr. John Holmes Greaves, a medal of merit to Mr. Arthur George Adams, and a certificate of honour to Mr. Thomas Locke Worthington.

#### Presentation of Portrait.

Mr. CHARLES BARRY formally presented to the Institute a portrait of Mr. Horace Jones, painted by Mr. Frank Holl, R.A.

On the proposition of Mr. GEORGE AITCHISON, a cordial vote of thanks was passed to Mr. Holl.

Mr. THOMAS M. RICKMAN read a paper, entitled—

#### Professional Lessons from a Boulder: a Plea for Geology as part of an Architect's Education.

The author described a particular boulder on the beach of Cardigan Bay, near the old castle of Crickieth. This boulder, besides having been split, had been roughly shaped by nature, had been weathered, coloured by the salt and spray, the lichen, the moss, and the sea birds. It was there to tell many things; for all form and all colour too were history, if we would but read it. Should it be said that the mere outline of a stone could but give results, whilst the outline of a building reveals a purpose, the objector might be reminded of the form of every shell found in stone as adapted to the continuation of the species of animal once inhabiting that shell. The series of outlines, all to scale, parallel to the hinge-joint of a bivalve mollusc, and not less the continuous lines radiating from the hinge, the same in infancy and through later stages of growth, every one of them was the development of the meaning of the form, like the delicate mouldings of a mullion curving through tracery. Let any architect study for a while the serried outline of such a shell, with every change of form and size in its life's history marked in the clearest manner, and he would learn a lesson in the adaptability of curves and shapes which would bring him back to the design proper for his mouldings, should he ever have been tempted to go astray. So, again, should he compare the devolution of allied genera in the matter of form, according to climate and life environment, he will come back, not uninstructed, to the use of his timber, brick, sandstone, limestone, marble, iron, or granite, but with the feeling that he has picked up ideas which it will be his business to turn to good account. By studying the forms of orthoceras, ammonites, and such newer births of geological time as the nautilus, by taking note of their mode of growing, straight or curved, or in coil, open, close, or involved, the outward form always corresponding with the position of the internal air-channel, the early years' growth of the individual still seen in the eye of the perfect and full-grown volute, the mode shown in which the internal coil bursts into the wide outer rim, the last formed aperture appearing in the natural termination of the antecedent convolutions, the professional aspirant would come back to his task of designing any curved architectural form with his eye refreshed by the sight of outlines full of meaning for him, and would not dare draw for the purpose of execution in stone, in wood, or in plaster any unmeaning shape. Let the architect contrast the elements of form to be seen in the bivalve shell and its hinge with those exemplified in the univalve on the one hand, and with those to be found in the multicellular shell on the other, and he will not fail to recognise distinctions of principle as great as can be traced in Classic architecture, of the most trabeated style, or in Gothic, the most arcuated. Nature's mode of working, said Mr. Rickman, was not like the plasterer's zinc mould horsed upon a straight-edge. The mould which shaped the shells was the soft pulp of the living animal in its perfect state, and repeated ever with more and more significance, and with a set of different sections, but all fitting the mould. And from such studies of nature the architectural instinct would come back to the examination of an antique building, and would penetrate the purpose of the designer. The purpose would be divined from the privacy of the dwelling, the indispensableness of the castle's inviolability, the worship celebrated in the church. The problem would be studied in the light of the improved political condition of the country, the cleanliness or filthy habits of the population, the current modes of offence and defence, the depth of the people's devotion. All these helped to clear up the artificer's aims. The history of a country was more to us than dates and names, and so the metamorphosis of an orthoceras into a nautilus conveyed to the mind ideas far greater than those of mere changes in stratification. To an architect the study of these changes revealed the growth of motive and the history of form. Such researches made him an engraver of the annals of his race. By seizing on the clues thus furnished by nature the course of architectural style would follow in the footsteps of political and race history, and architectonic forms would tell of the religion which had influenced the lives of the profession and its clients. Progress or retrogression in our buildings would be the test of



the education of the time. Whereas stones were mostly shaped by forces which it is the architect's business to control, the history of a boulder might help architects not only in the criticism of old buildings, but of their own works also, and so help in the formation of a really original style. The essayist urged that natural sciences, and especially geology, might fill the place for an architectural curriculum of the study of a dead language. Geology and language were each to be valued as a phase in the delineation of thought, of purpose, and of mind; language for the man of the day, geology for the architect, whose works were to tell to later eyes their own stone history.

On the proposition of Mr. E. Pansen, seconded by Professor T. Roger Smith, a vote of thanks was passed to Mr. Rickman, and the proceedings terminated.

#### SOCIETY OF ARTS PRIZE ESSAY.

SOME time since, the Council of the Society of Arts undertook to award in prizes for essays on "London Reconstruction" and the "Housing of the London Poor" a sum of 1,200*l.*, placed at their disposal by Mr. W. Westgarth.

The Committee appointed by the Council of the Society of Arts to consider the essays sent in for the above prizes, have reported to the effect that in their opinion none of the essays realise the requirements of the offer in such a manner as to justify them in recommending that the full amount of the prizes offered by Mr. Westgarth should be awarded. They recommended, however, that prizes amounting in all to 600*l.* should be awarded as under:—

Three prizes of 100*l.* each, to H. H. Bridgman, 42 Poultry, E.C.; J. Corbett, 24 Barton Arcade, Manchester; W. Woodward, 7 Duke Street, Adelphi, W.C.

Three prizes of 50*l.* each, to A. Wynter Blyth, Court House, St. Marylebone, W., and R. Greene, Berry Wood, Northampton; Clement Dunscombe, City Engineer, Liverpool; C. Scott, Town Hall, Belfast, and J. W. E. Tilley, Royal Avenue, Belfast.

Six prizes of 25*l.* each, to A. H. de Wind, Comber, Co. Down; J. S. Fairfax, 3 St. Paul's Road, Camden Square, N.W.; Victor Jetley, 8 North Audley Street, W.; T. E. Julian, 22 Palace Road, Roupell Park, S.W.; W. H. Newell, M.D., 201 Palisade Avenue, Jersey City, N.J., United States of America; G. W. Usill, Haldon Lodge, South Fields, Wandsworth, S.W.

The report and award has been accepted by the Council. The three essays to which prizes of 100*l.* are awarded will be published on behalf of the Society.

#### THE GUILDHALL CRYPT.

THE annual meeting of the London and Middlesex Archaeological Society took place on Tuesday at the Tallow-Chandlers' Hall, Mr. E. Knight, master of the company, in the chair, when a paper dealing with the history of the company was read by Mr. T. F. Monier Williams. A visit was paid to the church of St. Lawrence Jewry, which was described by the Rev. Louis Stokes as one of the best of Sir Christopher Wren's churches. One curious matter was that the Moorfields morass extended as far back as the church, and the architect was obliged to drive piles 12 feet long to the depth of 7 feet to get a foundation for the church on the north side. It was one of the most expensive of the churches built at that time, costing over 15,000*l.*, and taking nine years to build. A visit was then paid to the Guildhall and crypt.

Mr. A. White, F.S.A., said that the crypt, or undercroft, of most buildings was one of the most interesting parts, for many reasons. It told the better the history of the building above it than any other part, and this was particularly the case with the crypt they were now in. The portion they were in was a very small portion of the Guildhall, and extended under a small part of the east end of the hall. Whether the rest of the Guildhall had an arched crypt of this kind there were no means of determining. He would first say a few words upon the very peculiar locality in which they were, for one would have supposed that a great building like the Guildhall, the site of the government of the Corporation of London, would, at any rate, have been in one parish or in one ward. But one end of the Guildhall, that under which was the crypt, was in the ward of Bassishaw, in the parish of St. Michael, and the other was in the ward of Cheap. This was a matter of very great importance. They did not know whether the first hall stood upon this site, but Stowe had told them that it stood further to the westward, and that he remembered the ruins of the old hall in Aldermanbury. If that were the case, they met with another very curious local circumstance, because that would have been in the ward of Cripplegate. Therefore, if there were an ancient hall in that locality, it must have been one of very much greater antiquity than the present. Of that there was nothing whatever remain-

ing. On the south side of the Guildhall stood, as he could just remember, the chapel of the Guildhall. That was a building of very ancient foundation—certainly as early as before 1300; it certainly belonged to the thirteenth century. The building of the present hall did not commence until the year 1411; therefore, of course, there was a chapel there long before the present Guildhall was built. But there were indications of a more ancient hall than the present Guildhall. At the west end of the crypt there ran a very strong wall, evidently an external wall, and clearly not built as a partition wall; but it was an external wall, with every indication of an external doorway, and that the crypt was approached on that side. In the further part there were evidently no remains of anything at all like arcading; there were the springings of the arches, but no arched crypt carried out. There was another very great peculiarity in the crypt. He had examined very carefully a great many of the crypts of the great buildings of England in all parts of the country, and there was one rule to which he had found no exception. The crypt of domestic buildings had always a line of columns in the centre dividing it into two bays, and this was true even of the great hall of South Wingfield in Derbyshire, which was of a gigantic size. But he had found it to be an invariable rule in the crypts of all ecclesiastical buildings that there were two rows of columns down the centre, and that the crypt was divided into three bays, and this was the case with the crypt of the Guildhall. He believed that this crypt was not the crypt of anything built as a guildhall, but that it was the original crypt of the chapel of the Guildhall, and he believed that the chapel was in the parish in which they were, and not in the parish in which was the ancient Guildhall. Another important circumstance was that at the partial destruction of this hall in 1411 a very great deal of money was expended in rebuilding the chapel of the Guildhall. There could have been no reason for rebuilding the chapel simply because they were rebuilding the hall, and he believed that they wished to increase the hall to the eastward, and pulled down the old chapel, building a new one on the south side of the present hall. There were other reasons for this view. In pulling down the old chapel of the Guildhall some very interesting monuments were found, amongst them a slab which was now in the Guildhall Museum, to the memory of Geoffrey le Trompeur. This was an incised slab, which could not have been later than the thirteenth century, and therefore could not have belonged to a church, which, as he remembered it, was a building of the sixteenth century. Everything went to show that this was the site of the ancient chapel of St. Mary Magdalene, and that this was the crypt of the chapel itself. Another reason was that if it had been intended to have a crypt of this kind under the hall of Guildhall, it would have been carried out; but there was no evidence of any columns for the centre arches having existed. With respect to the style of the caps and bases of the columns, they were very much earlier than 1411. They belonged to a period certainly fifty, perhaps one hundred, years before. Another curious circumstance was that there was a doorway at the end, and up to a recent period there was a way out, even if it was a door of separation. Another reason was that drawings had been taken of all the bosses, and in a great many they were ecclesiastical subjects—monks and nuns and angels—such as were found in ecclesiastical buildings, and not in civil buildings.

#### THE NATIONAL COMPETITION.

THE thirty-second report of the Science and Art Department has been issued. In the report of the assistant-director for art, Mr. Bowler states that there has been an increase in the year of 10 schools and 1,124 students, who have worked successfully, as there is an increase in the numbers successful in every grade of examination and notably in the highest awards, those of the National Competition. The examiners of this competition were:—E. J. Poynter, R.A.; G. D. Leslie, R.A.; W. F. Yeames, R.A.; H. S. Marks, R.A.; J. E. Boehm, R.A.; Hamo Thornycroft, A.R.A.; W. Morris; G. Aitchison, A.R.A.; J. J. Stevenson, Professor W. C. Unwin, Walter Crane, Alan S. Cole, T. Armstrong, Director for Art; and H. A. Bowler, Assistant-Director for Art. The number of drawings sent up from schools of art for examination was 254,610 from 202 schools of art and branch classes. 1,339 third grade prizes were awarded for works in advanced stages which were passed forward for the National Competition. Those works only were exhibited in respect of which medals or Queen's prizes of books had been awarded. Eleven gold medals, 53 silver medals, 110 bronze medals, and 228 prizes of books were awarded. In addition honorary awards were made to students in training at South Kensington of 8 silver and 18 bronze medals and 31 book prizes. The gold medals were awarded as follows:—Four to Hanley, the subjects being modelled design for a vase, chalk drawing of figure from the nude, designs for majolica plaques and a painted vase, and modelled design for a flower-pot; two to Manchester (Cavendish Street), for designs for



calico printing and designs for printed cotton fabrics; one to Nottingham, for group in oil colours; one to Southampton (Hartley Inst.), for designs for carpets and models of the nude figure from life; and one to West London, for design for the side of a dining-room and decoration of a building.

The following observations on the subjects of study, exemplified in the works submitted for judgment, were made by the examiners for the information and guidance of masters and students in the schools.

*Drawings of Heads.*—In the drawings of large heads from nature there is a tendency to slovenly execution and extreme blackness, the differences of colour between the hair and the flesh are often too much emphasised, and the forms of the hair are hardly ever carefully rendered.

*Drawings from the Antique.*—No gold medal has been awarded in this class. A profile view of the *Fighting Gladiator*, which has obtained a silver medal, is the best of its class, but not up to the gold medal standard. Many of the drawings from the antique are messy and woolly in manner and have a tendency to extreme blackness.

*Drawings from the Life.*—The gold medal has been given with much satisfaction to a drawing from the Hanley School done in an excellent and thorough manner. It is one of the best ever sent up for competition, being remarkable for subtlety of outline and careful modelling. With a view to encourage extensive practice in drawing the figure among evening artisan students who are decorative workmen, and who have but little time for study, the examiners recommend that additional prizes be given in the same stage to students who, having already taken them for finished drawings from the life, may send up sets of smaller and less finished, though not careless, studies of figures in action from life. The examiners are of opinion that drawing of the figure from memory, both antique and living model, should be practised. They wish to point out that in decorative plaster-work or designs for pottery or for metal or woodwork, where the figure is introduced ornamentally, the level reached is much below that of the designs for floral decoration. They would gladly see more use made of birds and animals treated in a decorative spirit.

*Studies of Drapery.*—The studies of drapery arranged on antique figures, which the examiners were glad to see, are generally good, but one of them can hardly be counted as drapery, but rather as costume. Drapery implies an adaptation of folds to the figure. Many of the studies from pieces of hanging stuff are rather still-life pieces than studies of drapery. In some instances the colour of these stuffs is offensively startling.

*Modelling of Drapery.*—The examiners expressed much satisfaction with the modelled study of drapery sent from the Lambeth School, which in execution were both spirited and careful, and showed taste and judgment in arrangement.

*Modelling from Life.*—The works of Tonelli (South Kensington), to whom a gold medal has been awarded, were considered commendable, as being done in a careful and delicate manner with less of the showy execution and strongly-marked details which have obtained of late. Of three small figures sent from the Lambeth school, two were considered worthy of medals.

*Designs for Wall-paper.*—The designs for wall paper were, on the whole, poor and dull or rank in colour. Hardly any were light and gay, and very little invention was shown in them. An exception may be made in favour of one from the Manchester (Mech. Inst.) School of Art, which shows considerable ingenuity and good feeling for form.

*Designs for Tiles.*—The little scraps of pictorial, flower, and figure drawing sent up as tile designs are not at all decorative or ornamental in character, and almost in every case are bad in colour. Many of them are in fact studies of botanical specimens rather than suggestions derived from natural plants and worked out ornamentally, with due regard to the filling of the required spaces and the surface character of the tiles. The floor tiles are often wanting in dignity and sobriety of colour. The best among the designs for tiles is from the National Art Training School. Though the elements of this design are very simple, the combination is good and a pleasing pattern is obtained.

*Designs for Plaster-work.*—A silver medal has been awarded to a piece of work by Geo. W. Wilson, of the (Royal Architectural Museum) Westminster School of Art, in which the masses are well arranged and a good feeling for gradation of relief is shown. The examiners suggest that designers of plaster-work should not limit themselves to one or two styles. They might look with advantage to antique Roman work of the kind, or to that of the Jacobean and Elizabethan times in England. The modelled plaster-work shows more life and artistic feeling than usual.

*Designs for Gold or Silver Work.*—The examiners consider the designs for gold and silver work wanting in feeling for the beauty of the materials, and suggestive of a very mechanical kind of execution.

*Designs for Ironwork.*—The designs for ironwork, though

not very good, were considered better than those for gold and silver. In the drawings sent in of iron gates the designers seem generally to have confined themselves too much to a close imitation of the works of one short period.

*Designs for Carpets.*—In the drawings to which the gold medal has been awarded there is evidence that the designer understands the detail and knows how to make it suitable to the material. His work is well presented. The portion of the pattern shown on a large scale is well done, and invention is shown in the treatment, but he has erred in trying to give a sense of relieved moulding by shading. Some of the competitors, in giving only a very unimportant piece of the pattern full size, have failed to comply with the spirit of the rule.

*Designs for Cotton Prints.*—The examiners have seen with great pleasure a number of designs for cotton prints from the Manchester (Cavendish Street) School of Art—designs treated in a proper decorative spirit, and with due adaptation to material. The two gold medallists distinctly show invention in their works, and evidently understand the method of design for this material. It is obvious that there is much difference in the capacity of these students, and herein is seen evidence of intelligent teaching which is gratifying.

*Still-Life Painting.*—In the drawing of a geranium plant, to which a gold medal has been awarded, the crispness of the flower is admirable. The painting of the plant, and the understanding shown of its form and colour, leave little to be desired. The same may be said of its relation to the background, which, although very unsatisfactory in the matter of finish, is admirable in its subordination of tone and colour. The oil-painting which has gained a gold medal is done with great freshness and directness; especially is the gold vase to be commended, which has been executed with great care, but without needless and painful elaboration. In the silver medal still-life piece from Lincoln there is also a directness of method which is worthy of imitation. The examiners wish to point out that the arrangement or composition of the still-life groups ought to be more carefully considered, and that artistic and tasteful arrangement is taken into account in the awarding of prizes. They recommend that a gold medal be no longer given for this branch of study, which has of late occupied too large a place in the school course out of proportion to its educational value.

*Modelled Works.*—Two pieces of modelled work from Hanley, to which gold medals were awarded, have more artistic merit than is common among such works sent up for these competitions, and the examiners accordingly take higher ground in criticising them. The plaster model of a vase with a frieze of figures has great distinction in its contour, and there is a certain reserve or restraint in the relief which deserves praise, but it may be remarked that there is a slight discrepancy between the Renaissance character of the frieze and the linear decoration of the vase which is Greek in feeling. In the terracotta jardinière the figure looks a little thin and poor in juxtaposition with the massive base; in fact, the figures suggest metal-work, while the rest is suitable to the material actually used, terra-cotta. The ornament on the ends is somewhat monotonous in relief. In both these works considerable decorative sense is shown.

*Designs for Lace.*—The scheme of design for machine-made curtains remains very much as it has been for some years. The mere execution of the patterns for machine-made lace is as neatly carried out as ever, but there are no distinct signs of newness in invention. Hence the examiners were prevented from rewarding this class of work as highly as the designs for cotton prints, which indicated a new and praiseworthy development in this branch of designs and therefore called for commensurate marks of approval. In the designs for machine-made lace curtains the relation of the border to the filling is often wrong in scale, and the lines of separation between the border and the filling are not properly marked. Some of the designs for lace from Ireland have beauty of form and proper adaptation to the different processes of hand-manufactured lace.

*Drawings of Hands and Feet.*—The examiners would gladly see encouragement given to the drawing of hands and feet separately, such as those on a sheet sent from the Bloomsbury School. Studies from life are the best, but drawings done from good casts from nature are also useful.

*Architectural Drawing.*—In the architectural work is shown an appreciation of old examples, and a freedom from vulgarity and extravagance, which perhaps are of greater practical importance than originality. Carefully-tinted drawings of the lantern of St. Paul's from South Kensington have obtained several awards.

*Anatomical Drawing.*—For anatomical study methods which suffice to show a thorough understanding of the form ought to be encouraged rather than those which with much labour aim at a still-life treatment. The examiners wish to point out the want of a skeleton of good proportions. They recommend careful drawing of the bones where they are subcutaneous, and that knees and ankles, wrists and elbows, be especially studied.



*Drawings from Measurement.*—Two bronze medals and four book prizes were awarded to fully-shaded machine drawings. The three best of these indicated considerable power of dealing with difficult forms in isometric projection. The softness of artistic feeling in the two best drawings deserves great commendation. On the whole, the series of drawings of this kind sent up this year is more numerous and of better average quality than in either of the last two years. Of working drawings of machines there were no examples of any special merit.

A bronze medal was awarded for a set of drawings of building construction forming a very large and useful set of studies; a book prize was also awarded to a second set equally good in drawing but less extensive. Drawings of this kind belong to the stage in which a candidate is learning the use of his instruments, and taking this into account the two sets to which prizes were awarded may be regarded as excellent.

A book prize was awarded to a set of architectural drawings of a church of very great skill in draughtsmanship.

They appear to indicate the advantage to a student of seeing architectural drawings of a good style.

## ANCIENT MONUMENTS.

AT the annual meeting of the Society for the Protection of Ancient Buildings, held in the lecture-hall of the Society of Arts, Mr. William Morris, who presided, in moving the adoption of the report, which described the work done by the society in the past twelve months, said the question had passed through the domain of sentiment and got into that of business; and if the society went on long enough and stuck to its work doggedly enough it might save a few ancient buildings from destruction. In point of fact there was a kind of race going on between carelessness and ignorance on the one hand, and the amount of influence which that society could bring to bear upon public opinion on the other. The report presented in the main three classes of cases—first, cases which were gibbeted as examples of amazing stupidity in a country supposed to be educated; secondly, cases in which there were *pros* and *cons*, and they still had some hope of success; and thirdly, cases in which they had obviously done something useful. In the last year there was a greater number of cases of people requiring or accepting definite advice and help than had been before. After illustrating the work of the society by detailed mention of several churches and of the tower of Peterborough Cathedral, he said the defeat which the committee felt most keenly was that sustained in the case of Westminster Hall, and expressed his regret that, instead of the ancient remains of the old Hall, they were to have a new building in the nineteenth century based on Mr. Pearson's idea of what the Hall looked like in the latter part of the fourteenth century. He expressed similar regret with respect to Staples Inn, Holborn, and said the only suggestion he could make for its preservation was that some rich Englishman, or, better still, some rich Yankee, should make up his mind to buy the inn of Messrs. Pickford.

## THE INSTITUTION OF CIVIL ENGINEERS.

THE first annual general meeting under the revised by-laws passed last April, was held on Tuesday, June 2, 1885, the president, Sir Frederick J. Bramwell, F.R.S., being in the chair, when the report of the Council was adopted. There were on the books, at the end of March, twenty honorary members, 1,485 members, 1,932 Associate members, and 507 Associates, besides 843 students.

During the session twenty-four ordinary meetings were held, at which twelve papers had been read and discussed, and one other paper had been read, but its consideration was postponed till next term. For some of these communications the Council had awarded medals and premiums, as under:—A Watt medal and a Telford premium to Professor H. S. H. Shaw; a George Stephenson medal and a Telford premium to Mr. W. Stroudley; a Telford medal and a Telford premium to Mr. P. W. Willans; and Telford premiums to Mr. D. S. Smart, to Mr. A. Jamieson, and Mr. W. Shelford. The special thanks of the Council had been recorded to Messrs. Benjamin Baker and John Wolfe Barry, for the valuable descriptions they had given of the design and construction of the works of the Metropolitan and the Metropolitan District Railways. For papers to be printed in the proceedings without being discussed, a Telford medal and premium had been awarded to Mr. W. G. Brounger; Telford premiums to Professor W. C. Unwin, Mr. T. Andrews, Mr. J. G. Mair, and Mr. J. Craig, and the Manby premium to Mr. C. W. Kinder. There had been twelve supplemental meetings for students, at which as many papers had been read, and to eight out of the twelve papers Miller prizes had been awarded. The authors of the successful communications were Mr. F. G. Howard, Mr. H. H. Dalrymple-Hay, Mr. F. W. S. Stokes, Mr. H. T. Turner, Mr.

W. Kidd, Mr. S. R. Lowcock, Mr. E. J. M. Davies, and Mr. F. H. Hibblethwaite.

The ballot for Council resulted in the election of Sir Frederick J. Bramwell, F.R.S., as president; of Mr. E. Woods, Mr. G. B. Bruce, Sir John Coode, and Mr. G. Berkley as vice-presidents.



## Society of Arts.—Westgarth Competition.

SIR,—The following is a copy of correspondence with reference to the Westgarth Competition.

GEORGE W. USILL.

[COPY.]

Haldon Lodge, Southfields, Wandsworth, S.W. :  
June 6th, 1885.

H. H. Bridgman, Esq., 42 Poultry, E.C.

DEAR SIR,—I think it only right to inform you that, in the interests of the other competitors in the above, and myself, I have felt it necessary to draw the attention of the secretary of the Society of Arts to the unfair advantage you have taken of the awards to gain undue notoriety. Some of the competitors are out of this country, and surely *esprit de corps* should be a safeguard against abusing their absence.—I am, dear sir, yours truly,

(Signed) GEORGE W. USILL, Assoc. Mem. Inst. C.E.

42 Poultry, E.C. : June 8th, 1885.

SIR,—Replying to your communication of 6th inst., conveying the intimation that in your opinion I had taken unfair advantage of the award, you may not be aware that all the awards were published in the Journal of the Society of Arts of the 5th inst., and were consequently in print at the time I received intimation from the secretary. I therefore respectfully protest against your closing remarks.—Yours faithfully,

G. W. Usill, Esq. :

(Signed) H. H. BRIDGMAN.

Haldon Lodge, Wandsworth, S.W.

Haldon Lodge, Southfields, Wandsworth, S.W.  
June 8th, 1885.

H. H. Bridgman, Esq., 42 Poultry, E.C.

DEAR SIR,—Without any desire or intention of entering into a controversy with you upon the subject, in reply to yours of this date, I am bound to say that your justification (therein contained) of assuming the sole credit in the above, upon the grounds that you were the first to see the report in print (Society's Transactions) and to act upon it, is as unique as it is questionable.

Had you been the only recipient of the highest prize, it would even then have been in hardly good taste to single yourself out for notoriety. But seeing that there were two other gentlemen equally meritorious with yourself, with whom you are bracketed, simply because by alphabetical order you are placed first on the list, it is surely a breach of professional (if not ordinary) etiquette for you to take advantage of the fact.

Personally I have no interest in the matter, as you are all strangers to me, and, as you will see by the accompanying essay, I could never have hoped or expected to be in the first ranks, as I elected to treat the whole question from a general point of view. Notwithstanding, I feel that even the least of the premiated should have their fair share of any credit of having been successful in so large a competition.

I reserve the right to publish this correspondence.—I am, dear sir, yours truly,

(Signed) GEORGE W. USILL, Assoc. Mem. Inst. C.E.

## CHURCH BUILDING AND RESTORATION.

**Brighton.**—The building committee for the restoration of Queen's Square Church, Brighton, have issued further orders for the completion of the restoration from the plans and specification of their architect, Mr. Arthur Loader, 54 Old Steine, Brighton, and the builder is Mr. John T. Chappell, of 149 Lupus Street, London, who is about to commence the work at once.

**Halifax.**—The church of St. Anne-in-the-Grove, which has been remodelled from the designs of Mr. W. Swindon Barber, has recently been reopened. The greater part of the interior work, including the brass lectern and black wrought-iron gas-fittings, were supplied by Messrs. Jones & Willis, of Birmingham and London.

**Hereford.**—The church of Holy Trinity, Whitecross, has been opened. The nave, north and south aisles, and south porch only have been completed, but the foundations for the remainder of the structure have been put in, including those for the tower and spire, and the work will be done as soon as funds are available. On its completion, the church will accommodate about 700 people, and the style of architecture is Early English. Messrs. Godwin & Son, of Lugwardine, gave the whole of the tiles for the floor. Messrs. Warwick & Hucksion have carried out the contract, and the plans were designed by Mr. F. R. Kempson.



### NEW BUILDINGS.

**Alsager.**—The foundation-stone of new parish schools has been laid. The cost of the land, schools, and fittings will be from 1,500*l.* to 1,600*l.* The architects are Messrs. Paley & Austin, of Lancaster, and the contract is being carried out by Mr. Gratton, of Alsager.

**Bristol.**—Messrs. Edwards, Ringer & Co.'s new premises in Redcliff Street are just approaching completion. The building has been constructed from designs by the late Mr. J. H. Hirst, and carried out under the joint supervision of the son, Mr. H. C. M. Hirst, and Mr. H. Crisp, architects. The front elevation was designed chiefly by Mr. H. C. M. Hirst, from ideas suggested by his late father. The treatment is Italian throughout. This frontage in Redcliff Street consists of well-arranged shops, with all necessary store-rooms. The central entrance to the works is of unusual width. Close upon the entrance gates are two handsomely-constructed offices, projecting a little out of the line of the frontage, but not sufficiently far to spoil the effect of the double staircases and galleries at the further end, which communicate with every part of the building, and were supplied by Messrs. MacFarlane, of Glasgow. This same entrance forms a hauling way, and extends from the front to the back of the building. This is considered an important feature in the arrangements of the building, both with regard to ability and the appearance of the structure. Being open throughout to the top of the building, the place is admirably lighted, the roof being composed entirely of glass fitted in iron framework. The first rooms on the right-hand side of the ground floor form very commodious offices for the clerks, and there is also a private staircase leading to the offices of the accountants. Further on are the kitchens and other rooms provided for the workpeople at meal times. The remainder of the ground floor, as well as the two upper storeys, are intended entirely for the manufacture of cigars and tobacco. A detached building, in which the manufacture of snuff is to be carried on, will soon be completed. The whole building is as nearly as possible a square of about 130 feet. The front part is of Mansfield stone and granite plinths; the carving is by Mr. J. Steele, 13 Kingsdown Parade. The manufactory is built in a substantial style of white, red, and blue Cattybrook bricks. The whole of the flooring is fireproof, and was laid by Messrs. Dennett & Ingle, Whitehall, London, who also provided the ironwork for the central hall and roofing. The factory will be heated throughout by the steam apparatus supplied by Mr. Hodges, Temple Street, Bristol. The general contractors were Messrs. Stephens & Bastow. The clerk of works was Mr. George Salmon. The plumbing and gasfitting were entrusted to Messrs. Jones & Hudson, Redcliff Street. Mr. C. H. James, C.E., will superintend the arrangement of the new machinery.

### ARCHÆOLOGY.

**Society of Antiquaries of Scotland.**—The concluding meeting of the session was held on Monday in Edinburgh. The first paper read was a notice by Mr. J. Dalrymple Duncan, F.S.A.Scot., of a small local cemetery of the Bronze Age discovered at Uddingston, near the bank of the Clyde at Kylepark. In excavating for the construction of a road two urns were found about 12 inches under the surface. One measures 12 inches in height by 9½ inches diameter at the mouth, and the other 13¾ inches in height by 11 inches diameter at the mouth. The first is ornamented with a band of zigzags between two bands of horizontal lines impressed in the soft clay by a twisted cord. The second is more ornate in character, having a boldly ornamented portion underneath the rim of zig-zag mouldings and bosses implanted on the surface, while the interior of the rim is ornamented by a series of mouldings with circular indented markings at intervals. Fragments of a third urn were also discovered. The urns, though much broken, have now been reconstructed and presented to the National Museum by Mr. R. Thomson, architect, Glasgow.

### GENERAL.

**At the General Assembly** of the Royal Academy, Mr. Alfred Waterhouse was elected a Royal Academician and Mr. Henry Moore, painter, Mr. E. Burne Jones, painter, and Mr. J. W. Waterhouse, painter, were elected Associates.

**The Façade** of the royal palace at Naples is to be embellished with statues of former sovereigns, representative of the history of the kingdom, and the work will be executed by Neapolitan sculptors.

**Mr. E. Bancroft**, of the Manchester Academy of Fine Arts, has been elected a member of the Liverpool Water-colour Society.

**The Royal Dublin Society**, at their annual meeting last week, resolved to hold an International Exhibition of Arts and Industries on an extensive scale, at Ballsbridge, in 1887.

**Messrs. Morley & Woodhouse**, architects, of Bradford and St. George's Road, Bolton, have changed their Bradford offices from 15 Darley Street to 269 Swan Arcade.

**The Trustees** of the funds of the British Institution contemplate giving the money, about 20,000*l.*, to the National Gallery and the National Portrait Gallery.

**At a Meeting** of the Council of the University College, at Aberyswith, held on the 9th inst., Mr. J. P. Seddon was formally appointed architect for the completion of the college buildings.

**Mr. T. Stopher**, architect, of Winchester, who was appointed arbitrator in the case of an action for damages claimed by Mr. Wignall against Mr. Leach, the owner of a house in Queen Street, Portsea, for injuries to his premises in consequence of defendant having, by digging a cellar, undermined his property, has just given his award, ordering defendant to pay damages to the amount of 50*l.*, together with the costs of the action.

**Messrs. Sugden & Blood** will act as joint architects along with Messrs. Chapman & Snape in the preparation of amended plans for proposed baths and free library at Newcastle-under-Lyme.

**The Newbury District Field Club** made their first excursion this year, and paid a visit to Lambeth Palace and Westminster Abbey, under the leadership of Mr. Walter Money, F.S.A. Mr. Kershaw, M.A., showed the party over the library at Lambeth Palace.

**The Bishop of Worcester** has contributed 100*l.* towards funds which it is hoped may be raised for preserving the old Grammar School at Coventry from destruction, as the building is shortly to be vacated for new school buildings.

**Mr. W. St. Chad Boscawen** on Wednesday opened his third course of afternoon lectures on the "History and Antiquities of Assyria and Babylonia."

**The Old College** of Glasgow, dating from 1632, and which has for several years served as the North British Station, is now being taken down consequent on operations connected with the construction of the underground railway.

**The Memorial Library, Stratford-on-Avon**, has received a presentation from the Record Office of nearly three hundred volumes, consisting of Calendars of State Papers, many of them contemporaneous with the life of Shakespeare and the subjects which form his historical plays. Many of the books have illuminated *fac-similes* of the original documents from which the records are printed.

**The Northampton Rural Sanitary Authority** have decided to prosecute a builder for infringing the by-laws in the erection of certain houses, as there is a strong disinclination on the part of builders to conform to the building regulations.

**The Darlaston Local Board** have appointed a committee to inspect neighbouring towns and report as to the cost of erection of public buildings for the town.

**In the Aberdeen Police Court** a builder has been fined, with the alternative of four days imprisonment, for having erected a building before having given notice or lodged the plans as required by the Police Act.

**Society of Arts Medals.**—The Council of the Society of Arts have awarded the Society's Silver Medals to the following readers of papers during the session 1884-5:—To Anton Jurgens, for his paper on "The Preparation of Butterine"; to P. L. Simmonds, for his paper on "Present and Prospective Sources of the Timber Supplies of Great Britain"; to A. J. Ellis, B.A., F.R.S., for his paper on "The Musical Scales of various Nations"; to Thomas Wardle, for his paper on "Researches on Silk Fibre"; to H. H. Johnston, for his paper on "British Interests in East Africa, especially in the Kilimanjaro District"; to E. C. Buck, for his paper on "The Agricultural Resources of India"; to Mancherjee M. Bhow-naggee, for his paper on "The Present Condition and Future Prospects of Female Education in India"; to Dr. Frederick Siemens, for his paper on "Tempered Glass"; to Frederick J. Lloyd, for his paper on "The Chemistry of Ensilage."

**The Albert Palace**, a structure used for the National Exhibition opened in Dublin in 1872, has been erected at Battersea, and was opened by the Lord Mayor on Saturday last.

**The Official Liquidator** of Wells & Company (Limited), Mr. W. S. Oxborrow, of the firm of Oxborrow & White, public accountants, 57 Cheapside, E.C., has obtained the authority of the Court of Chancery to pay a first dividend of 1*s.* in the pound to creditors, and cheques are now being issued.

**The Derbyshire Archæological Society** on Saturday paid a visit to Tutbury Castle, an historical building which, though the date of its first erection is uncertain, is known to have served as one of the residences of King Ethelred.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JUNE 13, 1885.

## SKELDERGATE BRIDGE, YORK.

At a special meeting of the York City Council on Monday, the Skeldergate Bridge Committee reported the conclusion of the long-pending arbitration between the Corporation and Messrs. Handyside & Co. (Limited), the contractors for the ironwork of the Skeldergate Bridge. Originally by the contract, dated November 20, 1877, the contractors undertook to execute the work according to their specifications for the sum of 8,463*l.*, subject to the usual conditions as to additions or subtractions. The structure, however, was so materially altered that the clauses as to additions or subtractions became altogether inapplicable, and, in the result, the contractors sent in a total claim of 10,208*l.* 12*s.* 11*d.*, or 1,745*l.* 12*s.* 11*d.* beyond the sum named in the contract. In the meantime the contractors had been paid on the certificates of Mr. Page, the engineer of the Corporation, 6,500*l.*, leaving a difference of 3,706*l.* 12*s.* 11*d.* Of this sum Mr. Page was willing to certify to the amount of 1,933*l.* 7*s.* 6*d.* only, thus leaving 1,777*l.* 5*s.* 5*d.* in dispute. The matter had been referred to Colonel Haywood, the surveyor of the City of London. The illness of Mr. Page had precluded his being called as a witness on behalf of the Corporation, to explain and justify his disallowances from the contractors' bill. In this emergency the Town Clerk obtained the assistance of two eminent engineers. Colonel Haywood published his award on March 24, which was 4,056*l.*, or 347*l.* 7*s.* 1*d.* in excess of the claim, and the Corporation to pay the costs of the inquiry. The Council were asked to sanction the payment of the fees of the arbitrator, which were 24*l.*, and a few small charges to witnesses.—Mr. J. Brown, in moving the adoption of the report, gave the Council figures showing that the total cost of construction of the bridge had been 65,000*l.* or 66,000*l.*, which was certainly double the amount it was thought the bridge would cost. Since 1882 they had paid off 7,485*l.* of the loans originally borrowed. The first rate had produced 2,162*l.*, the second rate 2,194*l.*, and the third rate (up to March 25 last) 1,628*l.*, leaving a balance of 422*l.* yet to be paid by the collector. The latter rate was laid a year and a quarter ago, and he could not understand why the amount of 422*l.* should remain unpaid, to the detriment of the Council and the loss of the citizens. The tolls received from the bridge had fully come up to the anticipations of those who had advocated the construction of it, and there was no doubt they would continue to increase. The amount received up to March 25 was 6,396*l.* 19*s.* 3*d.* Instead, however, of having a balance at the banker's, the balance against them on revenue account to March 25 was 4,833*l.* 17*s.* 3*d.* They had, however, fifty years to pay off the debt, and the matter would become easier year by year. The Finance Committee desired in a short time to reduce the 3*d.* rate which had been put on the city since the opening of the bridge to 2*d.* He thought they would be able to afford it.—Ald. Rooke seconded the adoption of the report, which was carried without dissent.

## COMPETITIONS OPEN.

**BOURNEMOUTH.**—Aug. 19.—Designs are invited for the Construction of Two Marine Piers. Mr. G. R. Andrews, Town Surveyor, Bournemouth.

**BRISTOL.**—July 20.—Designs are invited for the Erection of Board Schools, Castle Green, for 1,000 children. Mr. Benjamin Wilson, Clerk to the School Board, Guildhall, Bristol.

**NORTHFLEET.**—June 23.—Plans are invited for the Erection of Schools to accommodate 200 Boys, 150 Girls, and 150 Infants. Mr. Fred. Mitchell, 49 Windmill Street, Gravesend.

**LIVERPOOL.**—Aug. 1.—Designs are invited for the Erection of Dwellings for the Labouring Classes. Mr. G. J. Atkinson, Town Clerk, Municipal Offices, Liverpool.

## CONTRACTS OPEN.

**ABERCARN.**—June 20.—For Erection of Shop and Two Dwelling-houses. Mr. David Davies, Architect, Club Chambers, Pontypool.

**ABERDEEN.**—June 13.—For 27 Tons of Channel and 55 Tons of Flat-bottomed Railway Rails, for the Town Council. Messrs. Jenkins & Marr, Architects, 16 Bridge Street, Aberdeen.

**ACKLINGTON.**—For Supply of Iron or Steel Boiler—Length, 28 feet; Diameter, 7 feet; Two Tubes, 2 feet 9 inches Diameter, with three Galloway Tubes in each. Bromhill Colliery, Acklington, Northumberland.

**ABERYSTWICH.**—June 18.—For Building Infirmary. Mr. E. M. Bruce Vaughan, Architect, Borough Chambers, St. Mary's Street, Cardiff.

**AMBLE.**—June 16.—For Erection of Co-operative Store Buildings. Messrs. Oliver & Leeson, Architects, Newcastle-on-Tyne.

**ARMAGH.**—June 27.—For Building Manse and Offices, for the First Presbyterian Congregation. Mr. J. H. Fullerton, Architect, Armagh. Quantities by Mr. E. N. Banks, C.E., Chichester Street, Belfast.

**BALLINASLOE.**—June 17.—For Building Day-rooms at Lunatic Asylum. Mr. T. Latimer, Secretary, Board of Control, Custom House, Dublin.

**BATLEY.**—June 15.—For Building Dwelling-house. Mr. J. T. Law, Architect, 64 Commercial Street, Batley.

**BECKENHAM.**—June 29.—For Construction of Seventeen Automatic Flushing Tanks and 4,000 feet of Pipe Sewer. Mr. G. B. Carlton, C.E., Surveyor to the Board, Beckenham.

**BEESTON.**—June 13.—For Rebuilding St. Mary's Church. Mr. C. H. Thornton, Architect, 3 Park Row, Leeds.

**BELFAST.**—July 1.—For Erection of Mission Hall. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

**BILBAO.**—June 26.—For Building Theatre. Messrs. Yeves & Co., 24 Fenchurch Street, E.C.

**BIRKENHEAD.**—June 19.—For Building Purifying House at the Gasworks. Mr. T. O. Paterson, Gas Engineer, Birkenhead.

**BIRMINGHAM.**—June 17.—For Construction of Goods Warehouse. The Secretary, Euston Station.

**BISHOP AUCKLAND.**—June 17.—For Construction of Passenger Station. Mr. William Bell, Architect, Railway Offices, Northgate, Darlington.

**BRIGHOUSE.**—June 16.—For Building Public Offices. Mr. John Lord, jun., Architect, Church Street, Brighouse.

**CARDIFF.**—July 1.—For Laying 30 miles of Cast-iron Main Pipes of 29 and 24 inches diameter, together with the Construction and Erection of certain Bridges and Subways over and under Railways, Canals, and Rivers, for the reception of the Pipes, and other Works. Mr. J. A. B. Williams, C.E., Cardiff.

**CHESTHILL.**—June 22.—For Additions to Farmsteadings. Mr. John Hamilton, Chesthill, Fordingal.

**DARLINGTON.**—For Wrought-iron Arched Bridge (of one span, 150 feet) over Tees at Sockburn Hall. Mr. Robert Robinson, C.E., 6 Dixon Terrace, Darlington.

**DENMARK.**—June 23.—For Delivery of Ten Locomotives. N. Holst, Director, Danish State Railways, Aarhus, Denmark.

**EAST COWES.**—June 22.—For the Supply of 350 feet run 15-inch Cast-iron Socket and Flange Pipe. Mr. H. C. Damant, Clerk, East Cowes, Isle of Wight.

**EDINBURGH.**—June 20.—For Providing, Laying, &c., Fireclay Pipes for the Water Trustees. Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

**EXETER.**—June 15.—For Altering and Enlarging Powhas Mills, Bonhay Road. Mr. J. Jerman, Architect, 33 Paul Street, Exeter.

**GEDLING.**—June 15.—For Building Pair of Semi-detached Villas. Mr. W. R. Radford, Architect, Pelham Chambers, Angel Row, Nottingham.

**GLOUCESTER.**—June 22.—For Building Board School to accommodate 684 Children. Messrs. Medland & Son, Architects, 15 Clarence Street, Gloucester.

**GOSFORTH.**—June 19.—For erection of Detached Villa. Mr. Benjamin F. Simpson, Architect, 2 Akenside Terrace, Jesmond, Newcastle-on-Tyne.

**HALIFAX.**—June 24.—For Building Coachman's House, Stable, Harness, Coach-house, &c. Mr. James Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

**HALIFAX.**—June 20.—For Alterations and Additions to Business Premises at Bull Green. Messrs. Horsfall & Williams, Architects, Post Office Buildings, Halifax.

**HAMPTON WICK.**—June 20.—For Building Board Schools, &c. Mr. R. T. Elsam, Hampton Wick.

**HEADINGLY.**—June 18.—For Building Five Through Houses for the Leeds Tramway Company. Mr. C. S. Nelson, Architect, Albert Chambers, Park Row, Leeds.

**HEBBURN QUAY.**—June 13.—For Building Board School, Teacher's and Caretaker's Houses. Mr. G. Mason, Clerk to the School Board, Ellison Street, Jarrow.



**HOLYWELL GREEN.**—June 17.—For Alterations and Additions to Congregational Church Schools. Mr. F. Bartram Payton, Architect, Laisteridge Road, Bradford.

**HOMERTON.**—June 23.—For Building Shelter Roof at the Eastern Ambulance Station, Brooksby Walk. Messrs. A. & E. Harston, Architects, 15 Leadenhall Street, E.C.

**HYDE, FORDINGBRIDGE.**—June 18.—For Building School, Pulling Down Existing School, &c. Mr. Robert J. Beale, A.R.I.B.A., Architect, Tottenham.

**ISLEWORTH.**—June 16.—For Two Tubular Boilers (18 feet long, 6 feet 3 inches diameter), delivered in Seating at the Brentford Union Workhouse. Mr. Edward Monson, jun., Architect, Grosvenor House, The Vale, Acton, W.

**KEIGHLEY.**—June 17.—For Supply of Cornish Steam Boiler, 12 feet long and 4 feet 6 inches in diameter, with all necessary Blocks, &c. Mr. E. Southwell, Workhouse Master, Keighley.

**LEEDS.**—June 15.—For Painting Exterior Work at Town Hall, &c. The Borough Engineer, Municipal Buildings, Leeds.

**LEYTONSTONE.**—June 17.—For Well Pumps and Additions to Tank at Union Workhouse. Mr. F. E. Hilleary, Guardians' Office, Union Road, Leytonstone.

**LEYTONSTONE.**—June 23.—For Building Six Girls' Houses at Schools. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**LIMERICK.**—June 15.—For Building Club House, Wellesley Pier. Mr. M. Hunt, Architect, 46 Lombard Street West, Dublin.

**LISCANNOR, CO. CLARE.**—June 24.—For Building Coastguard Station. Office of Public Works, Dublin.

**LONDON.**—June 17.—For Supply of Steel Rails, for the Oude and Rohilkund Company. Mr. W. F. Batho, Consulting Engineer of the Company, 9 Victoria Chambers, Westminster, S.W.

**LONDON.**—June 22.—For Supply of Furniture and Fittings for Extension of School Board Office. Mr. Bailey, Architect, School Board Offices, Victoria Embankment.

**LYNDHURST.**—June 14.—For Building Lychgate to Burial Ground. Mr. S. Coxwell, Crown Buildings, Lyndhurst.

**MADRAS.**—June 23.—For Supply of Wrought-iron Girders and Steel Bearings for Bridges. Mr. Julian Byrne, Secretary, 61 New Broad Street, E.C.

**NATAL.**—June 27.—For Construction of Wrought-iron Diving Cylinder. Mr. Walter Peace, Agent for Natal Harbour Board, 21 Finsbury Circus, E.C.

**NAVAN.**—June 24.—For Building Labourers' Cottages. Mr. G. Lacy, Board of Guardians Room, Navan.

**NORTHAMPTON.**—June 22.—For Building Sunday Schools for Gold Street Chapel. Mr. Samuel J. Newman, Architect, 32 Abington Street, Northampton.

**NORTH SHIELDS.**—June 15.—For Construction of Timber Quays, River Wall, and Lifeboat House and Ways. Mr. C. Gomoszynski, Borough Engineer, 112 Norfolk Street, North Shields.

**NOTTINGHAM.**—June 19.—For Extension of Stables in the Eastercroft. Mr. Arthur Brown, Borough Engineer, Municipal Offices, Nottingham.

**POOLE.**—June 22.—For Enlarging the Borough Hospital. Mr. John Elford, Borough Surveyor, King Street, Poole.

**POOLE.**—June 28.—For Supplying and Fixing of a Kitchen Range, fitted with Hot-water Service for Supply Baths. Mr. John Elford, Borough Surveyor, King Street, Poole.

**RHYMNEY.**—June 29.—For Extension of Pontlottyn Bridge. Mr. W. Lloyd Marks, Surveyor to the Board, 59 High Street, Rhymney.

**RUGBY.**—June 17.—For Alterations and Additions to Premises for the Co-operative Society. Plans at 6 Lawford Gardens, Rugby.

**SHEFFIELD.**—June 24.—For the Erection of Buildings fronting West John Street. Messrs. Flockton & Gibbs, Architects, 15 St. James's Row, Sheffield.

**ST. DOGMAEL'S, CARDIGAN.**—June 19.—For Building Drill Shed and Boat House, with Watch and Store Rooms over. The Director of Works Department, Admiralty, 71 Spring Gardens.

**TOTNES.**—June 20.—For the Supply of Iron Water-main Pipes, for the Erection of Collecting Tanks, Storage Reservoir, &c. Mr. Samuel Cuming, Borough Surveyor, Totnes.

**ULVERSTON.**—June 15.—For Alterations and Additions to Conservative Club, Fountain Street. Mr. J. W. Grundy, Architect, Brogren Street, Ulverston.

**WESTPORT.**—June 17.—For Works to Lecanvy Pier (Parapet, Paving, &c.). Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**WHITCHURCH.**—June 15.—For Building House. Mr. J. Hillary, Architect, Longparish, Hants.

**WHITEHAVEN.**—June 15.—For Works at various Farms. Mr. R. Allyne Robinson, Whitehaven Castle.

**WICKLOW.**—June 24.—For Construction of Pier in deep water, 200 feet long, with Sea Wall and Parapet, at Greystones, and Construction of Boat Slip. Mr. W. B. Soady, Office of Public Works, Dublin.

**WIGAN.**—June 22.—For Building Engine-sheds at Sowerby Bridge and Wigan. Plans at the Engineer's Office, Hunt's Bank, Manchester.

## TENDERS.

### BATLEY.

For Building Seven Terrace Houses, Park Road, Batley, for Mr. John Blackburn. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley. Quantities by the Architect.

#### Accepted Tenders.

|   |      |    |   |
|---|------|----|---|
| Robinson, Batley, mason's work          | £860 | 0  | 0 |
| Horsnell & Heald, Ossett, joiner's work | 347  | 0  | 0 |
| Senior, Batley, plumber's work          | 27   | 6  | 0 |
| Morton, Cleckheaton, plasterer's work   | 83   | 0  | 0 |
| Atkinson, Leeds, slater's work          | 63   | 18 | 0 |

Total . . . £1,381 4 0

Established 1820.]

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3 Silver and 4 Bronze Medals



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EXHIBITION, 1884.

Awarded for Sanitary Appliances.

# HENRY CONOLLY.

LIMITED,  
MANUFACTURING SANITARY ENGINEERS,

Call the attention of Architects, Surveyors, and Builders to their Closets, the advantages of which will be readily seen by the accompanying Illustration.

## THE "SAFETY" VALVE WATER-CLOSET,

WITH

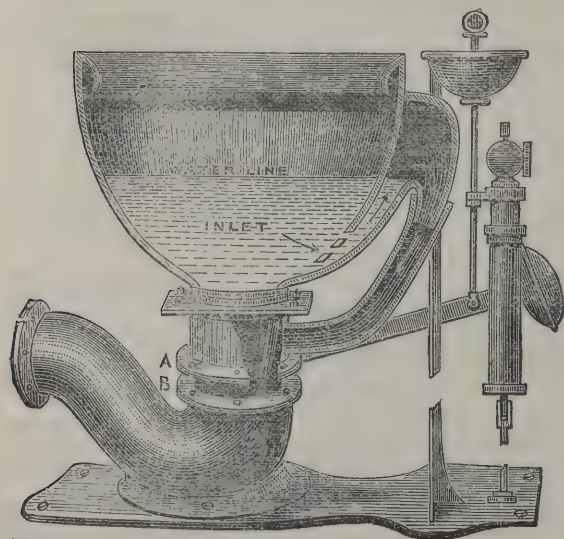
Conolly's Reversible Trap (Patent No. 3,754).

This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

CAN BE SEEN IN ACTION IN NEW SANITARY SHOW-ROOM.

53 & 55 Hampstead Road, 169 & 171 Drummond Street.  
WAREHOUSES—TOLMERS SQUARE, N.W.





**ACCRINGTON.**

For Wood-block Flooring at St. John's Church, Stonefold. Geary & Walker, 7 John Dalton Street, Manchester.

**BOURNEMOUTH.**

For Road Works on the Highfield Estate, Winton, Bournemouth. Mr. C. T. MILES, Surveyor.

*Roads.*

|   |          |
|---|----------|
| Troke, Winton . . . . .                                 | £139 8 0 |
| White, Moordown . . . . .                               | 136 11 6 |
| Pond, Corf Mullen . . . . .                             | 88 8 4   |
| SAUNDERS & WHITE, Bourne-<br>mouth (accepted) . . . . . | 80 0 0   |
| Watton, Winton . . . . .                                | 72 14 10 |

*Fencing.*

|                                      |          |
|--------------------------------------|----------|
| Watton, Winton . . . . .             | 154 4 4  |
| WELLMAN, Winton (accepted) . . . . . | 104 10 3 |
| Pond, Corf Mullen . . . . .          | 103 6 3  |

For Sewers and Roads, Alum Chine Estate. Mr. J. H. MOORE, Surveyor, Bournemouth.

|  |            |
|--|------------|
| Perry & Co., London . . . . .                | £2,649 0 0 |
| Adams, London . . . . .                      | 2,429 0 0  |
| Whettam, Weymouth . . . . .                  | 1,675 0 0  |
| Saunders & White, Bourne-<br>mouth . . . . . | 1,430 0 0  |
| Stickland, Bournemouth . . . . .             | 1,399 0 0  |
| Stanley, Bournemouth . . . . .               | 1,392 0 0  |
| TROKE, Bournemouth (ac-<br>cepted) . . . . . | 1,370 0 0  |
| Engineer's estimate . . . . .                | 1,350 0 0  |

**BRADFORD.**

For Wood-block Flooring, with Border in Hard-woods, at Restaurant Premises, Kirkgate. Geary & Walker, 7 John Dalton Street, Manchester.

**CAERPHILLY.**

For Building House at Rudry, near Caerphilly. Mr. G. ROSSE, Architect, Newport, Mon. Brown, Cardiff . . . . . £504 10 0  
WILLIAMS, Maindee (accepted) . . . . . 480 0 0

**CAMBRIDGE.**

For the Formation and Metalling of New Roads, and the Laying of a 9-inch Pipe Sewer on the Grange Road Estate, for St. John's College. Mr. J. CARTER JONAS, Surveyor, Cambridge.

|                               |          |
|-------------------------------|----------|
| Saint . . . . .               | £930 0 0 |
| Swann Bros. . . . .           | 905 0 0  |
| Honour . . . . .              | 675 0 0  |
| Thoday & Son . . . . .        | 647 0 0  |
| Surveyor's estimate . . . . . | 700 0 0  |

**CHELMSFORD.**

For Erecting Shops and Houses on the New Writtle Street Estate, Chelmsford, Essex, for Count Roemer. Mr. E. FARMAN, Architect.

|                                   |            |
|-----------------------------------|------------|
| Gozzett, Maldon . . . . .         | £6,150 0 0 |
| Good Bros., Walthamstow . . . . . | 5,700 0 0  |
| Saltmarsh, Chelmsford . . . . .   | 5,139 0 0  |
| Roper, jun., Chelmsford . . . . . | 4,570 0 0  |
| Moss, Chelmsford . . . . .        | 4,497 0 0  |
| Wood, Chelmsford . . . . .        | 4,479 0 0  |

**COVENTRY.**

For Construction of Main Sewer, Foleshill Road, Coventry. HUGHES & Co. (accepted) . . . . . £463 0 0

**CRANBROOK.**

For Painting the Outside of the Union House, Cranbrook.

|                                    |           |
|------------------------------------|-----------|
| Davis & Leney, Goudhurst . . . . . | £100 15 0 |
| Elliott, Cranbrook . . . . .       | 90 15 0   |
| Balcombe, Ticehurst . . . . .      | 77 0 0    |
| Harmer, Hawkhurst . . . . .        | 73 0 0    |
| Reeves, Staplehurst . . . . .      | 72 15 0   |
| CRADDOCK (accepted) . . . . .      | 69 10 0   |

**CROYDON.**

For Repair of Lennard Road, Croydon.

|   |          |
|---|----------|
| Clark, New Thornton Heath . . . . .                 | £443 0 0 |
| Streeter, Croydon . . . . .                         | 386 3 0  |
| Farthing, Lorrimer & Co., Wands-<br>worth . . . . . | 367 6 0  |
| Langridge, Croydon . . . . .                        | 354 4 0  |
| LAKE, Croydon (accepted) . . . . .                  | 347 12 0 |

**DARENTH.**

For External Painting at the School, &c., and Internal Decorative Repairs at the Asylum for Imbeciles at Darenth, near Dartford, Kent, for the Metropolitan Asylums Board. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities not supplied.

|  |            |
|--|------------|
| Swain . . . . .                        | £1,124 9 6 |
| Reid . . . . .                         | 877 0 0    |
| Derby . . . . .                        | 775 0 0    |
| McCarthy . . . . .                     | 649 0 0    |
| Dicksee & Dicksee . . . . .            | 640 0 0    |
| Gibbin & Son . . . . .                 | 499 10 0   |
| Stevenson . . . . .                    | 495 0 0    |
| Lilley . . . . .                       | 440 0 0    |
| PROCTOR, Woolwich (accepted) . . . . . | 380 0 0    |

**DONCASTER.**

For Painting Exterior of Mansion House, the Theatre, Corn Exchange, and Market Hall of Doncaster.

*Accepted Tenders.*

|   |        |
|---|--------|
| Daw, Doncaster (Mansion House). £45 0 0                             |        |
| Thornton & Son, Doncaster (Corn Exchange and Market Hall) . . . . . | 40 0 0 |
| Wright, Doncaster (Theatre) . . . . .                               | 6 4 6  |

**FOLKESTONE.**

For Building School for Girls at Folkestone, for the Kent Wesleyan Methodist School Association. Messrs. RUCK, SON & SMITH, Architects, Maidstone. Quantities supplied.

|  |            |
|--|------------|
| Slade, Maidstone . . . . .                   | £7,800 0 0 |
| Hayward & Paramor, Folke-<br>stone . . . . . | 6,580 0 0  |
| Clemmans, Folkestone . . . . .               | 6,481 0 0  |
| Brooks, Folkestone . . . . .                 | 6,440 0 0  |
| Moody, Folkestone . . . . .                  | 6,400 0 0  |
| Webster, Folkestone . . . . .                | 6,320 0 0  |
| Prebble, Folkestone . . . . .                | 6,309 0 0  |
| Wiles, Dover . . . . .                       | 6,200 0 0  |
| Howell & Son, London . . . . .               | 6,150 0 0  |
| Bingham, Headcorn . . . . .                  | 6,113 0 0  |
| Unwin, Folkestone . . . . .                  | 6,076 10 0 |
| Wallis & Clements, Maidstone . . . . .       | 5,973 0 0  |

**INTERNATIONAL HEALTH EXHIBITION.—MEDAL Awarded for****LEGGOTT'S PATENT ADJUSTMENT,**

FOR FANLIGHTS, SKYLIGHTS, &c.,

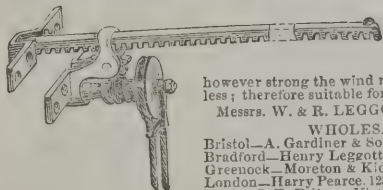
Is admitted to be the best ever put before the Public.

From 5s. each.

Write for REDUCED PRICE LIST and Testimonials to

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however strong the wind may blow. The action for opening or closing is powerful, easy, and noiseless; therefore suitable for sick wards. We consider your adjustment to be the best in the market.

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WHOLESALE AGENTS, where large Windows may be seen working.  
Bristol—A. Gardiner & Son.  
Bradford—Henry Leggott & Co., Market Street.  
Greenock—Moreton & Kidd, Hunter Place.  
London—Harry Pearce, 125 Great Portland St., W.  
Leeds—J. E. Ellison, Victoria Square.

**TESTIMONIAL.**

January 17, 1884.

The PATENT SILENT ADJUSTMENTS supplied by you to the Dewsbury District Infirmary, for Windows and Fanlights, give satisfaction to all concerned. No matter how much the wind shrinks, the windows are held fast in any position, and cannot shake, rattle, or move any way.

KIRK & SONS, Architects, Huddersfield and Dewsbury.



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Over all other Material for rendering Walls Damp-proof and increasing their strength, is now universally acknowledged by the leading Architects, Engineers, and Contractors.

To meet the rapidly-increasing demand, the Patentee has recently made extensive additions to his Machinery and Plant, which enables him to effect

**A REDUCTION OF OVER 25 PER CENT. IN THE PRICE.**

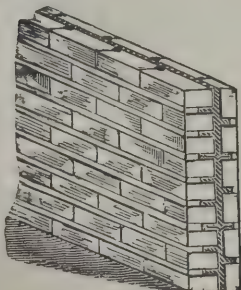
**WILLIAM WHITE,**

Head Office and Works:—BELMONT ROAD, ABERGAVENNY.

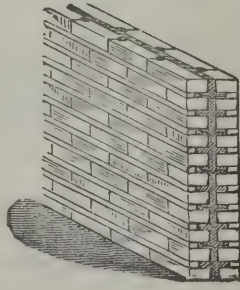
**CASES FOR BINDING THE ARCHITECT,**

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A brick on flat and one on edge will suitable for the purpose. The great economy in required. It is quite damp-proof and equal in strength to a 14-inch wall built with mortar only.



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## DUBLIN.

|  |        |      |
|--|--------|------|
| For Building Ten Labourers' Cottages, Castleknock, for the Guardians of North Dublin Union. Mr. P. F. LENARD, C.E., Architect, 34 Lower Ormond Quay, Dublin. |        |      |
| Dixon  | £1,300 | 0 0  |
| Pemberton  | 1,287  | 0 0  |
| Valentine  | 1,100  | 0 0  |
| Glynn & Fannin   | 975    | 16 4 |
| HARTLEY (accepted)   | 959    | 0 0  |

## GREENWICH.

|  |        |     |
|--|--------|-----|
| For Erection of Shops and Cottages in Bridge Street, Greenwich, for Mr. Blackmur. Mr. R. W. CRAWLEY, Architect, 12 Trinity Square, Tower Hill. |        |     |
| HOLLOWAY (accepted)  | £1,690 | 0 0 |
| No competition.  |        |     |

## GRIMSBY.

|  |      |      |
|--|------|------|
| For Alterations and Additions to the Corporation Hospital, Grimsby. Mr. JOHN BUCHAN, Borough Surveyor. |      |      |
| Chapman  | £262 | 0 0  |
| Nightingale & Danby  | 251  | 13 7 |
| Betts  | 247  | 0 0  |
| Topham   | 240  | 0 0  |
| Simons   | 230  | 0 0  |
| SLMONSON (accepted)  | 182  | 0 0  |

## HALIFAX.

|   |      |      |
|---|------|------|
| For Building House at West Vale. Mr. W. H. D. HORSFALL, Architect, Albany Chambers, Commercial Street, Halifax. |      |      |
| Accepted Tenders.   |      |      |
| B. & T. H. Riley, Greetland, mason  | £160 | 0 0  |
| Lomas, Salterhebble, joiner   | 68   | 0 0  |
| Firth, Halifax, slater  | 34   | 0 0  |
| Horsfall, Elland, plumber   | 7    | 15 0 |

## KIDDERMINSTER.

|   |      |      |
|---|------|------|
| For Building Stabling and Lodge, Kidderminster, for Mr. M. Tomkinson. Mr. J. M. GETHING, Architect. |      |      |
| Thompson  | £996 | 10 0 |
| Binnian & Son   | 973  | 0 0  |
| Howard & Sons   | 914  | 0 0  |
| SMITH (accepted)  | 895  | 0 0  |

## KIDDERMINSTER—continued.

|   |      |      |
|---|------|------|
| For Office Screens and Fittings, for Messrs. R. Smith & Sons. Mr. J. M. GETHING, Architect. |      |      |
| Howard & Sons   | £104 | 0 0  |
| Field   | 362  | 15 0 |
| SNOWDON, Rochdale (accepted)  | 340  | 0 0  |
| Adkins  | 325  | 12 6 |

## LITHERLAND.

|  |      |     |
|--|------|-----|
| For Erection of Wrought-iron Plate Girder Footbridge, and to carry Gas and Water Mains over Leeds and Liverpool Canal. Mr. W. B. GARTON, C.E., Engineer. |      |     |
| Braithwaite & Kirk, West Bromwich  | £381 | 0 0 |
| Rankin, Liverpool  | 323  | 0 0 |
| PENLETON & Co., Liverpool (accepted)   | 287  | 0 0 |
| M'Donald, Bootle   | 280  | 0 0 |
| Engineer's estimate  | 294  | 2 0 |

## LONDON.

|  |        |     |
|--|--------|-----|
| For Erection of the First Portion of Organ Factory, 550 Holloway Road.   |        |     |
| Lidstone   | £1,840 | 0 0 |
| Ridout   | 1,797  | 0 0 |
| Paine Brothers   | 1,693  | 0 0 |
| Chant  | 1,450  | 0 0 |
| Collins  | 1,440  | 0 0 |
| Scarborough  | 1,395  | 0 0 |
| Ward & Lamble  | 1,325  | 0 0 |
| Harper & Co.   | 1,299  | 0 0 |
| Parker   | 1,298  | 0 0 |
| NORRIS & LUKE (accepted)   | 1,190  | 0 0 |
| Thompson   | 945    | 0 0 |
| For Performing sundry External Repairs to Thirty Houses in Aske Street and Fanshaw Street, Hoxton. Mr. R. A. LEWCOCK, Architect and Surveyor, 88 Bishopsgate Street Within, E.C. |        |     |
| Anley  | £420   | 0 0 |
| Marr   | 315    | 0 0 |
| Jackson & Todd   | 295    | 0 0 |
| Pringle  | 295    | 0 0 |
| Roome  | 290    | 0 0 |
| Shurmur  | 175    | 0 0 |
| Steele Bros.   | 165    | 0 0 |

## LONDON—continued.

|   |        |      |
|---|--------|------|
| For Repairing and Painting Works at the Infirmary and Workhouse in the Fulham Road, for the Guardians of the Poor of the St. George's Union. Mr. H. SAXON SNELL, Architect, 22 Southampton Buildings, London. |        |      |
| Bamford   | £1,150 | 0 0  |
| Vigor & Co.   | 1,142  | 0 0  |
| Kearley   | 1,045  | 0 0  |
| Munday Bros.  | 950    | 0 0  |
| Hudman & Worsley  | 950    | 0 0  |
| Stevenson   | 860    | 0 0  |
| Brown   | 815    | 0 0  |
| Lily  | 669    | 0 0  |
| Dicksee & Dicksee   | 655    | 0 0  |
| For Erecting Work Premises in Short Street, Hoxton. Mr. R. A. LEWCOCK, Architect and Surveyor, 88 Bishopsgate Street, Within, E.C.  |        |      |
| Marr  | £763   | 0 0  |
| Jackson & Todd  | 749    | 0 0  |
| Roome   | 717    | 0 0  |
| Shurmur   | 707    | 0 0  |
| Anley   | 705    | 0 0  |
| Steele Bros.  | 674    | 0 0  |
| Pringle   | 628    | 0 0  |
| Goodall   | 610    | 0 0  |
| For Alterations to No. 43 Great Russell Street and 33 Duke Street, W.C., for Messrs. Jones & Willis. Mr. A. R. G. FENNING, Architect, 10 Lincoln's Inn Fields, W.C.   |        |      |
| Rider & Son   | £1,221 | 16 6 |
| HOOPER (accepted)   | 1,023  | 1 9  |
| For Alterations to The Adelaide, Liverpool Road, N., for Mr. W. Budd. Mr. ARTHUR W. SAVILLE, Architect, 99 Strand, W.C.   |        |      |
| Quantities supplied.  |        |      |
| Buckle  | £336   | 0 0  |
| Clinch & Patten   | 270    | 0 0  |
| Royal   | 266    | 0 0  |
| Hawkins   | 263    | 0 0  |
| Cook  | 243    | 0 0  |
| Walker  | 243    | 0 0  |
| Ward & Lamble   | 235    | 0 0  |
| HEATH (accepted)  | 198    | 0 0  |

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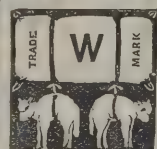
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"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."  
"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

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| Jackson & Todd  | 538  | 0 0  |
| Marr  | 520  | 0 0  |
| Anley   | 510  | 0 0  |
| Walker  | 497  | 0 0  |
| Steele Bros.  | 495  | 10 0 |

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|--|------|------|
| For Drainage of Wheatshaf Cottages, Maidstone. |      |      |
| Morritt  | £242 | 0 0  |
| White & Joy                                    | 225  | 0 0  |
| Beale  | 206  | 14 6 |
| Gray   | 186  | 0 0  |
| Farrow   | 180  | 10 0 |
| Clements                                       | 164  | 0 0  |
| Wood & Sons                                    | 162  | 0 0  |
| Marchant                                       | 150  | 10 0 |
| WILKINS (accepted)                             | 136  | 0 0  |

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| White & Joy                      | 225  | 0 0  |
| Beale                            | 206  | 14 6 |
| Gray                             | 186  | 0 0  |
| Farrow                           | 180  | 10 0 |
| Clements                         | 164  | 0 0  |
| Wood, Boughton, Monchelsea       | 162  | 0 0  |
| Marchant, Slade Field, Tonbridge | 150  | 10 0 |
| WILKINS, Loose (accepted)        | 136  | 0 0  |
| Rest of Maidstone.               |      |      |

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| C. Vallance, Mansfield   | 1,893  | 0 0 |
| S. & G. Frisby, Mansfield  | 1,778  | 0 0 |
| Fisher Bros., Mansfield  | 1,740  | 0 0 |
| Greenwood, Mansfield   | 1,670  | 0 0 |
| ALSON, Mansfield (accepted)  | 1,632  | 9 0 |

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| For Erection of Boundary Walls, Forming Foot-paths, &c., Crow Hill, Mansfield, for Mr. R. Barringer. Mr. R. FRANK VALLANCE, Architect, Mansfield and Nottingham. Quantities by the Architect. |      |      |
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| Ferguson, Newcastle            | 10,947  | 0 0  |
| N. & R. Reed, Newcastle        | 10,865  | 0 0  |
| Haswell & Waugh, Gateshead     | 10,610  | 0 0  |
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| Cheesman & Co., Brighton        | 1,684  | 0 | 0 |
| Botterill, London               | 1,643  | 0 | 0 |
| Harrison, Brighton              | 1,525  | 0 | 0 |
| Brookes, Brighton               | 1,427  | 0 | 0 |
| Peters, Horsham                 | 1,100  | 0 | 0 |
| LONGLEY, Crawley (accepted)     | 1,088  | 0 | 0 |

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|                                  |        |    |   |
|----------------------------------|--------|----|---|
| Drew, Chalford                   | £2,700 | 0  | 0 |
| Bowers & Co., Hereford           | 2,549  | 0  | 0 |
| Greenslade, Stroud               | 2,300  | 0  | 0 |
| Harper, Stroud                   | 2,143  | 13 | 0 |
| ENGLISH & SON, Stroud (accepted) | 1,975  | 0  | 0 |

**SWINDON.**

For Erection of Wrought-iron Girder Bridge over the Wilts and Berks Canal at Wellington Street, New Swindon, with extended Abutments, Wings, Walls, and Road Approaches. Mr. H. J. HAMP, Surveyor, Albion Buildings, New Swindon.

|                               |      |   |   |
|-------------------------------|------|---|---|
| Moss, Liverpool               | £955 | 0 | 0 |
| Webb, New Swindon             | 880  | 0 | 0 |
| WILTSHIRE, Swindon (accepted) | 864  | 0 | 0 |

For Paving West Side of Regent Street, and Taking Down Dwarf Walls, Iron Fencing, Verandahs, and Setting Back. Mr. H. J. HAMP, Surveyor, New Swindon.

|               |      |    |   |
|---------------|------|----|---|
| Bailey        | £349 | 0  | 0 |
| Free & Sons   | 299  | 10 | 0 |
| Ambrose & Son | 280  | 0  | 0 |

For Paving Regent Street, Swindon.

|                           |     |    |   |
|---------------------------|-----|----|---|
| Bailey, Kenton            | 349 | 0  | 0 |
| Free & Sons, High Wycombe | 299 | 10 | 0 |
| AMBROSE, Bath (accepted)  | 280 | 0  | 0 |

**TODMORDEN.**

For Primitive Methodist New Schools, Knowlwood. Mr. JESSE HORSFALL, M.S.A., Architect, Todmorden and Rochdale.

*Accepted Tenders.*

Lumb, mason and brickwork.  
Crossby, carpenter and joiner.  
Black, slating and plastering.  
Whitaker, plumbing and glazing.

**UCKFIELD.**

For the Drainage of Burial Ground, &c., in Claremont Road, Uckfield.

|                                    |      |    |   |
|------------------------------------|------|----|---|
| Reynolds, jun., Brighton           | £173 | 0  | 0 |
| Homewood, Brighton                 | 167  | 0  | 0 |
| Pelham, Uckfield                   | 137  | 15 | 0 |
| Ware, Uckfield                     | 130  | 0  | 0 |
| TYHURST & SON, Uckfield (accepted) | 89   | 0  | 0 |

**WALSALL.**

For Construction of the Ploek and Birchill's Sewers, Walsall.

|                                  |        |   |   |
|----------------------------------|--------|---|---|
| M'KAY, Stoke-on-Trent (accepted) | £3,950 | 0 | 0 |
|----------------------------------|--------|---|---|

**WALTHAMSTOW.**

For Construction of Earth and Concrete Carriers (1,700 yards), &c., at Low Hall Farm. Mr. G. B. JERRAM, Engineer, Town Hall, Walthamstow.

|                                   |        |   |   |
|-----------------------------------|--------|---|---|
| Wells, Woodford                   | £3,255 | 0 | 0 |
| Wise & Wilson, Walthamstow        | 2,571  | 3 | 7 |
| Jackson, Leyton                   | 2,338  | 0 | 0 |
| Bell, Tottenham                   | 2,248  | 0 | 0 |
| Durden & Co., London              | 2,152  | 6 | 8 |
| Cooke & Co., Battersea            | 1,990  | 0 | 0 |
| Owen & Co., Fulham                | 1,715  | 0 | 0 |
| Nicholls, Wood Green              | 1,683  | 0 | 0 |
| E. WILSON, Walthamstow (accepted) | 1,400  | 0 | 0 |
| Catley, London                    | 1,330  | 0 | 0 |

**WALTHAMSTOW—continued.**

For the Construction and Fixing of about 1,700 feet of Wooden Troughing, Staging, &c., at Low Hall Sewage Farm, Walthamstow. Mr. G. B. JERRAM, Engineer.

|  |        |   |   |
|--|--------|---|---|
| Riches, Walworth                       | £1,055 | 0 | 0 |
| Durden & Co., London                   | 792    | 0 | 0 |
| Jackson, Leyton                        | 697    | 0 | 0 |
| Johnson & Co., London                  | 690    | 0 | 0 |
| Bell, Tottenham                        | 658    | 0 | 0 |
| Garrud, Hackney                        | 635    | 0 | 0 |
| Willsmer, Walthamstow                  | 547    | 0 | 0 |
| Nicholl, Wood Green                    | 543    | 0 | 0 |
| Minett Bros., Stratford                | 542    | 6 | 4 |
| Fuller, Walthamstow                    | 540    | 0 | 0 |
| Cooke & Co., Battersea                 | 515    | 0 | 0 |
| Scott, Walthamstow                     | 514    | 0 | 0 |
| Spelt, Upton Park                      | 474    | 2 | 3 |
| Wilson, Walthamstow                    | 460    | 0 | 0 |
| Owen & Co., Fulham                     | 405    | 0 | 0 |
| BOSELEY & SONS, Walthamstow (accepted) | 395    | 4 | 3 |

For Private Street Improvement, Grove Place, Walthamstow. Mr. G. B. JERRAM, Surveyor.

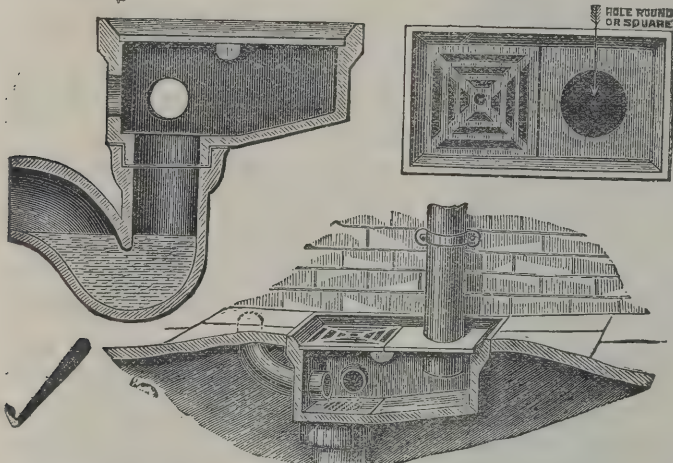
|                   |      |    |   |
|-------------------|------|----|---|
| Wise & Wilson     | £939 | 7  | 5 |
| Bell              | 898  | 0  | 0 |
| Cooke & Co.       | 890  | 0  | 0 |
| Wilson            | 879  | 0  | 0 |
| Jackson           | 850  | 0  | 0 |
| Nicholls          | 806  | 0  | 0 |
| Adams             | 804  | 13 | 4 |
| Johnson           | 747  | 0  | 0 |
| Durden & Co.      | 736  | 0  | 0 |
| REEVES (accepted) | 668  | 0  | 0 |

For Reconstruction of Sewer, Grove Place, Walthamstow. Mr. G. B. JERRAM, Engineer.

|                                |      |    |   |
|--------------------------------|------|----|---|
| Wise & Wilson, Walthamstow     | £189 | 0  | 0 |
| Reeves, Walthamstow            | 182  | 10 | 0 |
| Cooke & Co., Battersea         | 169  | 0  | 0 |
| Durden & Co., London           | 163  | 0  | 0 |
| Adams, London                  | 151  | 5  | 0 |
| Nicholls, Wood Green           | 145  | 0  | 0 |
| Jackson, Leyton                | 140  | 0  | 0 |
| Johnson, Walthamstow           | 134  | 0  | 0 |
| Bell, Tottenham                | 131  | 0  | 0 |
| WILSON, Walthamstow (accepted) | 110  | 0  | 0 |

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**Forms Drain for Area or Surface.**

**Ventilates the Pipes and Trap. Is easy of Access for Clearance.**

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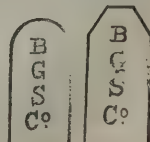
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**WALTHAMSTOW—continued.**

|   |      |      |
|---|------|------|
| For Supplying and Fixing special Steam Pump and Tubular Boiler at Low Hall Sewage Works, Walthamstow. Mr. G. B. JERRAM, Engineer. |      |      |
| Shanks & Co., London  | £358 | 0 0  |
| Tangye Bros., Birmingham  | 350  | 0 0  |
| Warner & Sons, London   | 347  | 0 0  |
| Coalbrookdale Co., Shropshire   | 310  | 0 0  |
| Harris, Forest Gate   | 318  | 13 0 |
| Wedlake, Romford  | 312  | 0 0  |
| Dodman, King's Lynn   | 297  | 0 0  |
| HAYWARD, TYLER & Co., London (accepted).  | 295  | 0 0  |
| Wolstenholme, Radcliffe   | 279  | 0 0  |
| Dyne Steel Co., Newport, Mon. (boiler only)   | 164  | 0 0  |

**WEDNESBURY.**

For Wood-block Flooring for Parish Church Restoration. Geary & Walker, 7 John Dalton Street, Manchester.

**WELLINGTON.**

|  |        |     |
|--|--------|-----|
| For Building Bank Premises, Wellington, Somerset. Mr. E. T. HOWARD, Architect, North Street, Wellington. |        |     |
| Gibbard  | £3,190 | 0 0 |
| Follett  | 3,140  | 0 0 |
| Spiller  | 2,990  | 0 0 |
| Dart   | 2,950  | 0 0 |
| Pollard  | 2,949  | 0 0 |
| BERRY, Crediton (accepted)   | 2,890  | 0 0 |
| Poole  | 2,850  | 0 0 |

**WEST DERBY.**

|  |      |      |
|--|------|------|
| For the Construction of Windsor Road Passages, West Derby. |      |      |
| Catterall & Co.  | £173 | 17 6 |
| Armstrong, Bootle  | 140  | 18 0 |
| McCabe & Co.   | 137  | 5 8  |
| Bulcock, Tuebrook  | 131  | 14 0 |
| Anderton & Co., Edge Hill                                  | 130  | 0 0  |
| Chadwick   | 113  | 0 0  |
| Walkden & Co.  | 111  | 10 0 |
| Worthington  | 100  | 0 0  |
| Anwell   | 89   | 16 4 |
| BOSTOCK, Tuebrook (accepted)                               | 53   | 4 0  |
| Remainder of Liverpool.                                    |      |      |

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**WORKINGTON.**

|  |      |       |
|--|------|-------|
| For Laying and Jointing 1,200 yards of Gas and Water Pipes, diameters ranging from 16 inches to 7 inches, Workington.  |      |       |
| FLEEMING & MURRAY, Cleator Moor (accepted)   | £317 | 18 11 |
| For Construction of Intake Chamber, Laying Special Pipes, the Fixing of 28-inch Valves, &c., River Derwent, near Coops at Salmon Hall, for the Workington Local Board. |      |       |
| Intake Chamber, &c.  |      |       |
| R. H. & H. Hodgson, Workington   | £430 | 9 6   |
| Valves and Ironwork.   |      |       |
| Blakeborough & Son, Brighouse, Yorkshire   | 409  | 7 0   |

**WORKSOP.**

|  |      |      |
|--|------|------|
| For Street Improvement Works, Worksop.               |      |      |
| Bailey Bros.   | £385 | 13 1 |
| A. & H. HOBSON (accepted)                            | 286  | 8 11 |
| For Supply of Steam Roller, Worksop Board of Health. |      |      |
| Barling Bros., Darnall                               | £385 | 13 0 |
| H. & A. HOBSON, Sheffield (accepted)                 | 286  | 8 0  |

**WORTHING.**

|  |     |      |
|--|-----|------|
| For Extending Groyne on the West Side of Pier, and Scarfing the Five Adjoining Groynes (labour only), Worthing. Mr. W. HORNE, Town Surveyor. |     |      |
| Field  | £34 | 11 0 |
| GOBLE (accepted)   | 31  | 1 0  |
| Hills  | 25  | 1 0  |
| All of Worthing.   |     |      |

**YOTTENFEWS.**

|   |      |      |
|---|------|------|
| For Building Dwelling-house, Yottenfews.              |      |      |
| Accepted Tenders.                                     |      |      |
| Tyson, Gosforth, mason work                           | £220 | 0 0  |
| I. Mossop, Seascale, joiner                           | 149  | 16 0 |
| Eilbeck, Gosforth, slating, plastering, and cementing | 121  | 13 6 |
| T. Mossop, Calder Bridge, painting                    | 27   | 10 0 |
| Sumpton, Cleator Moor, plumbing and glazing           | 17   | 0 0  |
| Stone found by the proprietor and cartage.            |      |      |

**TRADE NOTES.**

A STAINED-GLASS window has been erected on the north side in the chancel of the parish church, Machynlleth, in memory of the late Marquess of Londonderry. The tracery work is of Cefn stone. The glass was supplied by Mr. Alexander Gibbs, London. The stone came from Messrs. Chatham, Jones & Co., Ruabon. Mr. David Gillart, surveyor, Machynlleth, superintended the work. The masonry was executed by Mr. Edward Edwards.

At a meeting of the Council of the Wolverhampton Chamber of Commerce on Friday last week, it was announced that the South Staffordshire Railway and Canal Freighters' Association had taken up a scheme, involving an expenditure of one million sterling, for deepening the Great Junction Canal between Birmingham and London to allow of the passage of steamers of 120 tons burden. The Association have decided to order a survey of the route.

WE have just received a very fine sheet of designs of tile hearths from Webb's Worcester Tileries Company. These hearths are being exhibited at 10 Baker Street, Portman Square, where the stand from the late Building Exhibition, at the Agricultural Hall, has been permanently erected. The tileries are now under the management of Mr. John Harvey, by whom many alterations and improvements have been made in the manufacture of the well-known specialities of the firm.

MESSRS. GEARY & WALKER, of 7 John Dalton Street, Manchester, have been instructed to lay their patent "Premier" system of wood-block flooring at premises in Kirkgate, Bradford, to be used as a restaurant; parish church, Wednesbury, now being restored; church of St. John, Stonefield, near Accrington; schools for Sisters of Mercy, Dublin; Wrockwardine Schools, Wellington, Salop, &c. This firm have recently laid their flooring at the Royal Eye Hospital, Manchester; new post-offices, Doncaster; St. Chad's Church, Liverpool; Burnley Workhouse, offices at Hull, and the hospital at Bromley, Kent. WE

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J. E. SMITH,  
Vestry Offices, The Town Hall, Westminster, S.W.  
February 1885.



have described Messrs. Geary & Walker's patent system in previous issues.

A MEMORIAL mural tablet, erected by the congregation of Free St. Cuthbert's, Edinburgh, to the late Sir Henry Moncreiff in the vestibule of the church, has been unveiled. The tablet measures 5 feet by 3 feet, and is of plain Sicilian marble. The design is Gothic. In an indented circle in the centre of the tablet a bust of statuary marble in full relief is placed. The tablet was designed by Mr. Hippolyte J. Blanc; the Sicilian marble-work was executed by Messrs. Johnston & Davidson, architectural sculptors; and the bust, which is a copy of one which stood in the Academy last session, was entrusted to Mr. Hutchison. Mr. Blanc drew up the design. The total cost was about 100*l*.

### SANITARY INSTITUTE OF GREAT BRITAIN.

AN examination of local surveyors and inspectors of nuisances under the Sanitary Institute of Great Britain, at their rooms, 74A Margaret Street, Regent Street, W., took place on June 4 and 5. Twenty-five candidates presented themselves, nine as local surveyors, and sixteen as inspectors. Questions were set to be answered in writing on the 4th, and the candidates were examined *viva voce* on the 5th. The Institute's certificate of competency to discharge the duty of local surveyors was awarded to William Fraser, J. A. Angell, and J. Houghton, and to discharge the duties of inspectors of nuisances to James Bateman, Edwin Sortwell, George Wilson, James Skinner, J. H. Beel, J. T. Hawkins, J. Tait, Ralph Thomson, J. Pearson, Colin G. Mitchell, T. Lowther, W. S. Hart, T. D. Gratz, and James Bastiman. The questions were as follows:—

#### Paper I.—Local Surveyors.

1. State the principal provisions of the Public Health Act of 1875. Is it applicable to the whole country? Has it been modified by subsequent legislation, and, if so, how?

2. What power does a sanitary authority possess with regard to making by-laws?

3. If asked to advise upon the projected drainage of a town, what would be the chief points to which you would in the first place direct your attention? Explain what would be the conditions which would limit your choice of outfall.

4. What is the best method of sewage removal for rural districts? Give your reasons for your preference.

5. Where a cesspool for the reception of filth—solid or liquid—is unavoidable, what precautions should be taken in respect of—(a) Its position? (b) Its ventilation? (c) Its connection with house drains? (d) Its general construction?

6. How much sewage would pass in twenty-four hours through a sewer of 8 inches diameter, running full, laid at an inclination which would give a velocity of 3 feet per second; and what population would this sewer suffice for in a town with a public water supply, where the rain and surface water, other than that from the roofs and paved yards of houses, is carried off by a separate system? Give your calculation in full.

7. If you are called upon to report whether the connections of the drains of a house with the sewer have been properly made, in a town which has adopted the model by-laws of the Local Government Board, to what points would you more particularly direct your attention? Illustrate your answer by sketches.

#### Paper II.—Local Surveyors.

8. Having to advise as to supplying a town with water, how would you proceed to examine the surrounding district, and what data would you collect for the purpose?

9. What quantity of water would a steam-engine of 12 horse-power (effective) raise 50 feet high in twelve hours? What would it cost per annum to work such an engine under the above conditions, coals being 13*s*. 4*d*. per ton, working six days of twelve hours each, a week?

10. What steps would you take to detect

and remedy any waste of water in your district?

11. What provisions would you suggest for stopping the damp from penetrating through the basement walls and floors of a house which is to be built on a damp soil, and with its floors 4 feet below the surface of the ground? Illustrate your answer by a section.

12. What are the points to be considered in providing efficient ventilation? Give examples, with details as to size and arrangements—(a) For sleeping-rooms? (b) For living-rooms? (c) For workshops?

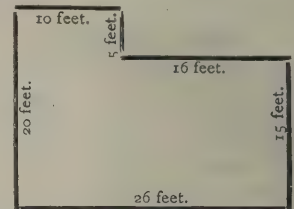
13. Make a sketch of, and describe in detail the materials, construction and drainage of a road to be made in a district where the ground is of soft deep clay.

#### Inspectors of Nuisances.

1. What are the provisions of the Public Health Act with regard to the exposure of infected persons and things?

2. Mention the rules in the model by-laws with reference to common lodging-houses. What should guide the Inspector of Nuisances in his examination of premises under the Public Health Act?

3. Define over-crowding, and explain how you ascertain if rooms are over-crowded. In the accompanying sketch showing the plan of a room which is 12 feet high, what is the cubic space, and how many people would you allow to sleep in it?



4. If an offensive smell is complained of at a scullery sink, how would you investigate the matter, and what remedies would you suggest? Give two or three examples.

# THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY. VENTILATION WITHOUT DRAUGHT SOLVED.

The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C., and 4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fabr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



5. In what circumstances is it necessary to have butts or cisterns for the storage of drinking water, of what materials are they usually made, and in what ways may the water in them become contaminated?

6. State what constitute nuisances in respect of—(a) Smoke? (b) Smells? (c) Noise?

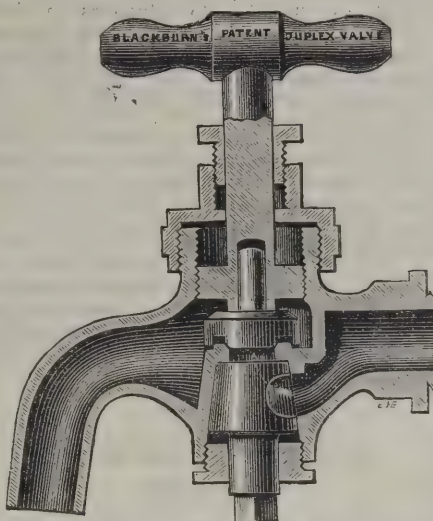
7. How would you deal with a nuisance arising from an accumulation of—(a) Refuse from a dwelling-house? (b) Trade refuse?

8. How would you proceed to disinfect a house in which a case of typhus fever or small-pox had occurred?

### BLACKBURN'S PATENT DUPLEX VALVES.

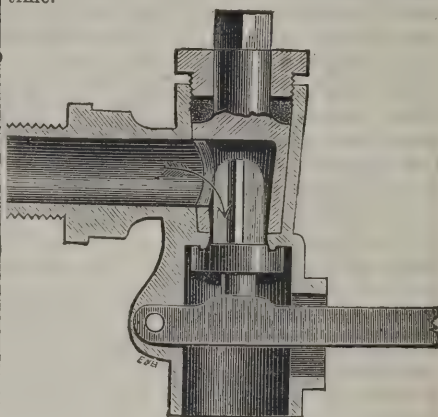
A USEFUL and efficient apparatus has been brought out by Mr. Henry Conolly, of 53 and 55 Hampstead Road, N.W., in the shape of a duplex valve, or, to speak more correctly, valves—one being the duplex ball valve, and the other the duplex bib valve. Among the advantages possessed by the apparatus is that waste of water is absolutely prevented. It can be taken to pieces, repaired, and refitted without interrupting the supply of water or steam in the pipe to which it is attached. The washer can be renewed or the valve ground in at any moment, and thus continuous leakage is out of the question, whereas ordinary taps frequently are allowed to drip month after month, seeing that to stop the leakage would necessitate stopping the water-supply till the evil was remedied. The construction is very simple. It is a gland-cock and screw-down valve combined, but the gland-cock is only brought into use when it is desired to examine or repair the valve. In the lower part of the body is a hollow plug, having an aperture at the side and open at the top in the bib tap, and at the bottom in the ball valve, forming a clear passage for the water which flows through the aperture into the plug, and, passing upwards, is stopped by the screw-down valve immediately above, by means of which water is drawn in the

usual manner. This valve has a raised seating formed in the body of the tap, and has no contact with the plug. When it is desired to examine or repair the valve it is only necessary to give the hollow plug already described half a



turn, thus shutting the water off from contact with the valve and working parts, which can then be taken out and replaced at leisure without trouble or waste. The patent duplex valves and taps are made in all the ordinary ball, bib, and main forms, and the principle may be applied to any special description of valve by arrangement with the patentee. The valves and taps have been fitted in private houses, institutions, and other places, and have given great satisfaction. They are capable of being repaired at any moment without interfering with the general supply. Water companies will consult both their customers' and their own interests by requiring the use of these valves. For lavatories and other departments fitted with several taps, great economy can be effected

by adjusting the hollow plug so as to allow only a moderate flow, no matter how high the valve is lifted. For steam purposes the duplex valves are most valuable. Not only can any particular valve be examined or repaired at any moment, but steam valves commanding branch pipes can be closed, the valve removed, a cap screwed on, and the steam turned on again without the valve itself being necessarily replaced, should it be inconvenient to do so on account of stopping various operations. The valve can be ground in or otherwise repaired at the close of the day's work, or at any suitable time.



They are most useful for private houses, as the ball valve can be repaired and made equal to new while the service branch from the main is charged with water.

For hot-water service the patent duplex bib valves are invaluable. With the hot-water taps at present in general use, before the most trifling repair can be effected the fire must be let out, cooking suspended, and many domestic arrangements upset, causing general inconvenience.

Considering its intrinsic value, and the large number of purposes to which the new inven-

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tion is applicable, we anticipate that Mr. Conolly will experience a very large demand from architects, water companies, and the public.

### UNHEALTHY AREAS, NOTTINGHAM.

THE Nottingham Town Council have adopted the report of the Health Committee on the condemned area in Parliament Street. In the report the Committee state that they have continued their negotiations with the owners of the properties in the condemned area, upon the terms mentioned in the report to the Council, dated the 5th day of April, 1882, namely, that the price to be paid for the properties should be the same as that on an ordinary sale from a vendor to the Corporation, with 10 per cent. in addition for compulsory purchase. The whole of the owners, with the exception of three, entered into agreements with the Corporation that the prices should be fixed by Mr. Robert Evans (Evans & Jolley, architects and surveyors, Nottingham) on behalf of both parties. Mr. Evans sat for several days in October and November last at the Exchange, and heard the claims of the various owners and the evidence on behalf of the owners and the Corporation as to the values of the properties. The Town Clerk conducted the cases for the Committee, and the leading architects and surveyors of the town were called on behalf of the Corporation. The cases were on behalf of the owners conducted by their respective solicitors, who also called professional witnesses in support of the claims. Mr. Evans published his awards on the 30th and 31st days of March last, with the names of the owners and lessees, together with the amounts awarded, set out in schedule. These awards amount to a total sum of 141,341*l.* Of this sum 13,460*l.* is awarded in respect of trade compensation to several owners who carried on business on the properties belonging to them. After deducting this from the total amount there remains 127,881*l.* as the awarded values of the properties dealt with by Mr. Evans. The total claims for these properties amounted to 178,039*l.*, and the values put on the properties

by the professional witnesses for the Corporation amounted to 105,130*l.* The amounts awarded were 22,751*l.* in excess of such last-mentioned values, and 50,158*l.* below the owners' claims. The claims for trade compensation amounted to 20,785*l.*, and the awards, as before stated, to 13,460*l.* No valuations in these matters were made in behalf of the Corporation. It seems, therefore, that the Corporation have no reason to be dissatisfied with the arbitrator's awards, and that he has acted fairly between both parties. With regard to the claims of the three owners who declined to enter into the agreement to refer to Mr. Evans, an arbitrator (Mr. B. B. Hunter Rodwell, Q.C.) has been appointed by the Local Government Board in accordance with the Artisans' and Labourers' Dwellings Acts. The Committee recommend the Council to confirm their proceedings, and to direct the Finance Committee to raise the necessary sums of money required to complete the acquisition of the area included in the scheme, by mortgage, loan, or otherwise, as they may think most expedient.

### OLD CHESHIRE CHEESE INN, WALLASEY.

THE village of Wallasey in "Doomsday" is called "Walea" in a charter of 1081, and was afterwards changed to Walayesigh. After 1487 it is written Wallesey and Wallsea.

"Ormrod's History of Chester" states that "in the reign of Elizabeth, Wallasey had a little port, to which there belonged three barks and fourteen men, a very inconsiderable quantity, but nevertheless nearly one-fourth of the number of barks and mariners which then were employed at the infant port of Liverpool on the opposite shore, as in the same year, 1565, a census extant in the town records states the entire number to consist of only twelve barks navigated by seventy-five sailors." The Old Cheshire Cheese Inn is a quaint, squat, long, one-storey building, thatched, divided into two rooms, with a cock-loft over the kitchen. It is

stated that King Charles II. slept in this old bed-chamber. The gable of the kitchen is built with freestone in regular coursed work, having an angle fireplace and a two-light mullion window, now built up with a modern window at one side. The entertaining-room has a large hooded chimney corner used in the days of log fires, with two old-fashioned squat seats. The roof is framed with arched jaw principals in oak, the feet rest upon the floor for support, and the rafters are tied across here and there. The beer-cellar is opposite the entrance, which is direct into the room. Here is a very pretty Queen Anne door and casings in panels and lattice-work, and a cupboard of the same date is fixed in the chimney corner.

The road into the village at this point being narrow, the Commissioners have purchased the land upon which the inn now stands from the proprietor of the Vale Brewery, for the purpose of making the road wider, which will be a great improvement, and in a few weeks this ancient hostelry will be cleared away. The license dates back 220 years.

Mortimer's "History of the Hundred of Wirral" says:—"In 1690 the troops of William III. were encamped in the village and neighbourhood, previously to their embarkation for Ireland in the year 1696, accompanied by his Majesty in person and a brilliant staff, including the Duke of Monmouth, the Marquis of Ormonde, the Earls of Manchester, Oxford, Portland, and Scarborough, and many others. The host of the Cheshire Cheese takes pleasure in showing the kitchen, which is traditionally reported to have been selected for the royal dormitory.

"The Wallasey Leasowe was probably the oldest gentlemen's racecourse in the kingdom, being noticed by Webb as existing in the early part of the seventeenth century. In 1683 the Duke of Monmouth rode as jockey a race which he won, and presented the plate to the daughter of the Mayor of Chester. Races discontinued 1750."

"Wallasey was once an island, its original name being Kirkby-in-Walley, meaning the church in the woody island: the parish being separated

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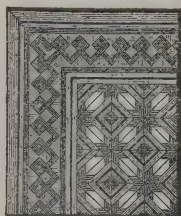
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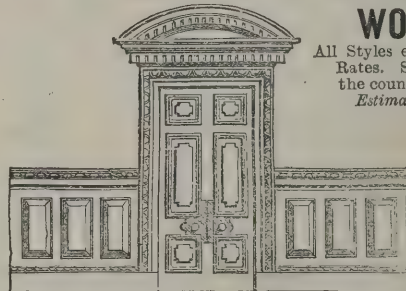
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from the rest of the hundred by a small brook called the Birkin. Tree-stumps and peat are still to be seen, the remains of a dense forest towards the sea." (Hume.)

A new hostelry is now being built in the garden belonging to the old inn in the Queen Anne style. The old wood and other fittings will be refixed here, and the old oak timbers made into furniture, so that any architectural features the old house may be considered to possess will be preserved. The new building has been designed by Mr. T. C. Ebdy, architect, of Hamilton Street, Birkenhead, the contractors being Messrs. W. & J. Varty, of New Brighton.

### BUILDING BY-LAWS IN BEDFORD.

At the last meeting of the Rural Sanitary Authority, a deputation of local architects and builders handed in a list of amendments to the building by-laws. The deputation comprised Messrs. Usher, John Day, Young, Mercer, Anthony, architects; and Messrs. G. Haynes, Richards, Foster, Warton and Leighton, builders.

Mr. Usher said he appeared with the deputation of architects and builders of the town, and stated that they had been looking over the by-laws with great care, had spent a considerable time over them, and brought a considerable amount of judgment to bear on them; and they found them very oppressive and deterrent to the building interests of the town of Bedford. He would say they did not attend there to represent the jerry-building and scamping trade in any way whatever: the town should have good sound laws, and he could say for himself, and on behalf of his colleagues there that day, that they found the officers of the Authority—Mr. Lund, Mr. Hull, and Mr. Meek—were very expert, and looked well after the interests of the town; but they must carry out the laws the Authority put into their hands, and those laws they (the deputation) found to be very oppressive. He thought every member of the Authority had received a copy of their recommendations, and they hoped they would

take them into consideration and act decisively, and early too. He said early because there were some thousands of pounds lying idle in the town, and building was quiet and at rest in consequence of the oppressive character of those laws; therefore it was of great importance that no time should be lost in the amendment of them. He made a little calculation, and found that there were really many thousands of pounds lying idle because the builders could not proceed under those laws. That related specially to houses from 30% to 45% a year, in which the party walls were now required to be of greater thickness than in the metropolitan districts of London. It also affected the artisan class in the town very much. There was no restraint as yet in the application for houses; there was in fact a great demand for houses from 40% to 60% a year continually flowing in. They asked that no time should be lost in amending those laws, and that the Authority would empower their surveyor and inspectors to fall back on the old by-laws whilst the amendments were taken into consideration. If they would give them their careful consideration, it would be for the interest, not only of the building trade, but of the borough itself.

The Mayor (Mr. Hawkings) said he could not say what the Authority would do, but he was sure they would do the best they could. He thought the whole of the proposed amendments they had made should be put into the hands of a committee, which should be empowered to call to its assistance any number of builders or architects to assist them in the consideration of the amendments. Speaking on behalf of the Authority, he was exceedingly obliged to the deputation for the great interest they had taken in the matter, and for the respectful manner in which they had come before the Council to express their views. Their work was so important that they could only wish, as an Authority, to court the confidence of every section of the community. They felt that it was important to have that confidence if the work of the Authority was to be carried out satisfactorily; without it, it was impossible to adjust the interest of every class so that none

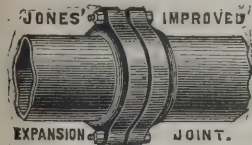
of them should clash and irritate the other. Coming to the builders, they felt they were so important to the interests of the town, and the welfare of the borough depended so much on the attitude of the builders, that they would go out of their way to consider them, and would pay the utmost deference to their views; and particularly to the architects and men like Mr. Usher, who was always prepared to go out of his way to advise them wisely and well. His Worship then gave a short history of the by-laws, and said three years ago it was felt that some alteration was required. The matter was put into the hands of a committee, which comprised two medical men, a large builder, and a retired architect; it had besides the assistance of their surveyor, and therefore it was only right to say that they would be unlikely to be rash or unjust. The committee went to work very carefully and adopted as their basis the model by-laws of the Local Government Board. When the by-laws came to the Authority from such a committee, and under such auspices, they did not go into such minute details of them as they otherwise might have done. But by public advertisement it was said that they were prepared, and a draft ready to be submitted to the Local Government Board, but before being so submitted it was open for the architects' and builders' criticism and for the public generally. The Authority asked for it and he only regretted that the interest they had in the town did not lead them then to inspect those by-laws. They did not do that, and consequently the Authority came to the conclusion that they were in favour of them. He laid no particular stress upon the constitution of that committee, nor were they more responsible than the other members of the Council; they were all jointly and equally responsible. Personally his one desire was to secure two things—firstly, good drainage; secondly, good materials. With regard to the thickness of the walls, he felt that was a matter which could be very much in the hands of the builders, but in the interests of the whole town he wished to secure good drainage and good materials.

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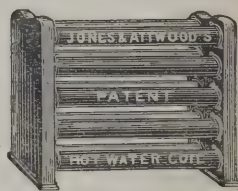
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Sir FREDERICK BRAMWELL, C.E., F.R.S., Chairman of the Executive Council of the International Inventions' Exhibition, 1885, in referring to the preservation from fire of inflammable building materials, made the following remarks in his Presidential Address at the Institution of Civil Engineers, on January 13th, 1885:—

"The processes, more or less successful, that have been tried are so numerous that I cannot even pretend to enumerate them. I will, however, just mention one, the Asbestos Paint, because it is used to coat the wooden structures of the Inventions' Exhibition. To the employment of this, I think, it is not too much to say those buildings owed their escape, in last year's very dry summer, from being consumed by a fire that broke out in an exhibitor's stand, destroying every object on that stand, but happily not setting the painted woodwork on fire, although it was charred below the surface. I do not pretend to say that surface application can enable wood to resist the effects of a continued exposure to fire, but it does appear that it can prevent its ready ignition."

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# The Architect.

## THE WEEK.

THE awards of the "Prix du Salon" and the travelling bursaries were determined on Saturday last. This year a sculptor, M. HORACE DAILLON, gains the coveted prize. His principal work is the *Awakening of Adam*. Next to him came M. FRITEL, the painter, whose *Solum Patrie* was deserving of a high reward. The bursaries for travelling have been awarded as follows:—Architecture: MM. QUATESOUS and DEPASSE. Painting: MM. MANGIN, FRITEL, HAMMAN, LAURENT, and MARTIN. Sculpture: MM. PECH and G. LEROUX.

A REFORM BILL for the Royal Academy, drafted by "An Outsider," has been published in the pages of a contemporary. Everybody, says the writer, knows that those works which fulfil the conditions set down in the rules as to frames and so forth are passed in rapid succession before the selecting committee, and are marked "A," "D," or crossed, according as they are "accepted," placed on one side as "doubtful," or "rejected" altogether. Now, it will probably astonish the public very considerably to learn that the committee really comes to no decision, practically speaking, inasmuch as that for many years past not more than 175 pictures out of the thousands sent in have even been accepted outright. The cause of the phenomenon is simply expediency. For in times gone by a goodly number of pictures used to be accepted unconditionally, if they merited acceptance; but as it often happened that in the process of hanging a "doubtful" picture, taken at random, secured a place on the walls just because it fitted in well, and "accepted" pictures were afterwards found to have been thereby crowded out, it was determined to silence the clamour which this incongruity gave rise to by the simple method of reducing the "A's" to a minimum and leaving the bulk of the pictures "D's"; so that if a painter had his picture returned unhung, he had no special cause for complaint. The limitation of the number of works sent in by outsiders to two, and by Academicians to four, is a remedy suggested whereby this state of things may be ameliorated, the number of works sent in be reduced, the work of the selecting committee lightened, and the quality of the exhibition improved.

IN reviewing the second volume of "The Life of Raphael," by Messrs. CROWE and CAVALCASELLE, we suggested the importance of illustrating the process by which the painter designed his pictures, which was, speaking generally, to take the most eligible bits out of other pictures and to make a new combination of them. We have since had an opportunity of examining the immense mass of materials which Mr. CROWE has been collecting during the last twenty-five years for his work. He has copied or had photographs taken of many of RAPHAEL's pictures, and of all the drawings relating to them which can be discovered in the public and private collections of Europe. They are arranged systematically, and in consequence the process of compilation becomes plain to every observer. It has been said that GRAY's "Elegy in a Country Churchyard" resembles a mosaic, as all the fine phrases have been derived from other writers. RAPHAEL's works are of a similar class: they are "elegant extracts," and the difficulty is henceforth to prove his originality. The reproduction of the evidence could not be undertaken unless at the public cost. But would it not be possible for the Royal Academy or the Royal Institution to tempt Mr. CROWE to exhibit his collection, and to give an explanatory lecture on the most extraordinary revelation that has ever occurred in respect to a famous artist?

THE annual report on the proceedings of the Public Record Office during 1883 has just been published. Amongst the mass of information given is an account of the progress made during the year in making facsimiles of national manuscripts and other documents by the process of photozincography, and with the calendars. The volumes of calendars published in 1883 were the seventh volume of

the Calendar of Letters and Papers, foreign and domestic, of the reign of HENRY VIII., for the year 1534; the tenth volume of the Calendar of Domestic State Papers during the Commonwealth, the fifth volume of the Calendar of Treasury Papers, and the second part of the fourth volume of the Calendar of Letters, Despatches, and State Papers relating to the negotiations between England and Spain, including the years 1531-3. Six additional volumes of the series of Chronicles and Memorials of Great Britain and Ireland during the Middle Ages were published during the year. The researches made in foreign documents and the investigation of the Canadian archives are also referred to, as well as the amount of business done in the Search Office, and other matters.

THE new hospital at Havre was opened on Sunday last. It was designed by M. LÉON DAVID, who was placed first in the competition. The cost has been 1,875,000 francs, or over 6,000 francs per bed. There are seventeen pavilions, running east and west, with the principal façade to the south. Each is completely isolated, and largely exposed to the sun's rays.

WRITING from Stratford-on-Avon, Mr. ARTHUR HODGSON, the mayor of that town, makes an earnest appeal to the English nation and "our American cousins" for funds for the restoration of the church in which SHAKESPEARE is buried. The total sum required, he says, is, according to the estimate of the architects, Messrs. BODLEY & GARNER, 12,000*l*. "There is no intention to beautify, remodel, pull down, or reconstruct, but to repair and maintain our noble parish church, which was dedicated six hundred years ago to the glory of God, and is the sepulchre of one of the greatest men that ever lived. The memory of WILLIAM SHAKESPEARE is closely bound up with Stratford and Stratford Church, and extends to the whole civilised world. The sum of 12,000*l*. is large. Warwickshire has been severely hit by agricultural depression, and, unfortunately, the three largest churches in the county—St. Michael's, Coventry, St. Mary's, Warwick, and the Holy Trinity, Stratford-on-Avon—are simultaneously making appeals for a Church Restoration Fund. It may be a misfortune, but it is a necessity, the gnawing tooth of time having left its unsightly marks upon these noble churches, and no time is to be lost to prevent their falling into decay."

THE Birmingham School Board have been trying to obtain compulsory powers for the acquisition of a piece of land belonging to the London and North-Western Railway Company, for the purposes of a site for a new Board school. A Select Committee of the House of Lords on Monday, however, refused to confirm the order, as they did not consider the School Board had made out its case. Of course evidence was given on the part of the School Board to show that the proposed site was the most desirable of all sites, and that for one reason or another no other sites were so available, &c., or as Mr. MICHAEL, Q.C., for the School Board put it, it was absolutely necessary that they should have that site, there being no other land available. The School Board inspector, perhaps, was inclined to be facetious when, in cross-examination, he added that he considered that "near the gasworks was a good place for a school, especially if the whooping-cough was about." It seems, however, that the Board will have to forego this most desirable site for their proposed school, and no doubt they will be rewarded in the long run by finding some other site which will be a good place for a school, more particularly when measles are about.

AN account has been furnished by M. MASPERO, the conservator of the Museum of Boolak, of recent discoveries made at Akhmim, on the banks of the Nile. Having noticed in villages of the neighbourhood that the water-troughs in front of the houses consisted of sarcophagi, cut out in part like the human form, his inquiries elicited from the peasants that, when in need of a new drinking fountain for their cattle, they went to the mountain and brought back as many as they required. M. MASPERO now says he has explored the hill over an extent of at least two miles in length, and everywhere found it intersected with pits and chambers.



## THE CONFERENCE OF FRENCH ARCHITECTS.—II.

THE principal attraction for the third day of the Congress (Wednesday) was the description of "le premier temple de Jérusalem," which was to be given by M. PERROT, the director of the Ecole Normale Supérieure, and M. CHIPIEZ, the architect. The names of these gentlemen are not unknown in England, for translations of the volumes of their "Universal History of Art" are published in London almost simultaneously with the appearance of the originals in Paris. Literary partnership is more common in France than in England, and its advantages are exhibited in that work. M. PERROT holds a high rank among *savants*; but he recognised the fact that, as art of every kind was formerly connected with architecture, it was necessary, if his history were to be trustworthy, that he should secure the co-operation of an architect, and, having been attracted by an essay of M. CHIPIEZ, he sought out that gentleman, and at once arranged a partnership with him. The restorations which M. CHIPIEZ has made of Assyrian and other temples are based on literary as well as archæological evidence. They are always consistent in their parts, and it is difficult to point out a feature that is misplaced. But the majority of people cannot accept experiments of the kind without hesitation. The most ample newspaper description of a modern building is insufficient to enable us to make a sketch that would resemble the work, and the old writers certainly thought more of effect and less of detail. In the case of the well-known description given by PLINY of his villa, where there appears at first sight to be the most minute detail, a perfect realisation is still an impossibility, as we can see by the differences between the schemes of restorers. It is not, therefore, surprising that, while everyone was charmed who heard the explanations of MM. PERROT and CHIPIEZ, and saw the projections on the screen at the Ecole des Beaux-Arts, yet if a vote could be taken few of the architects would be found ready to believe that the question had been settled once and for ever.

The object of the authors was to demonstrate the architectural importance of the words of EZÉCHIEL, and they maintained that, although the description was given as a vision, yet, if taken in connection with what is found in the Books of the Kings, the Chronicles, and Josephus, it will enable us to realise the *ensemble* of the edifices on the Moriah, the Temple and its dependencies, just as they existed when the city was captured by NABUCHODONOSOR. MM. PERROT and CHIPIEZ do not claim that all the parts of the *ensemble* indicated by the prophet have been achieved by them in their restoration, but they say that the vision is sufficient to allow of a plan being drawn which would serve for the reconstruction of the Temple hereafter. M. CHIPIEZ, having studied the vision from an architect's point of view, has come to the conclusion that it is not to be classed with the description of the heavenly Jerusalem in the Apocalypse, but that the figures in the Hebrew text suggest a *modulus* which was generally employed, and by the use of which a coherent plan can be obtained. There may have been documentary evidence as well as traditions among the Levites, which would illustrate at least the principal sides of the Temple, and, if so, they must have been known to the prophet. Whatever may be the value of his vision, MM. PERROT and CHIPIEZ do not believe for a moment that it is a poetic romance, and in this sceptical age that is an important concession.

Among the corresponding members of the Institute of Architects we doubt if there be one who is so zealous for its interests or so desirous to serve his *confrères* as M. CHARLES LUCAS. If he were a consular agent for Great Britain in Paris, he could not be more ready to accede to applications for his aid. The subject of his paper offered a strange contrast to what came before it, and suggested how manifold and widely separated are the matters in which an architect must take concern. M. LUCAS gave a "Compte rendu du Congrès des Sociétés savantes," and in so doing brought his auditory from the Holy Place in Jerusalem back to Paris and the Quartier Latin. For eight centuries at least the environs of the Hill of Ste. Geneviève have been supposed to be the place of all others where a welcome was offered to everyone who sought knowledge or could impart it. But even there exclusiveness prevails, and within the Sorbonne, of which

the name is almost synonymous with freedom, a number of societies are allowed to meet in the building and form a sort of imitation of the Institut. The speakers, who "take all knowledge for their province," are not afraid to grapple with the difficult problems of architecture, whether considered as an art, or as an element in sociology. Thus, for example, in April they discussed the most economical means of constructing workmen's houses, and the partition of house property. But there is no recognition of the Société Centrale in the discussions. Architects and builders may be condemned without a word being heard on their behalf. In France an importance is given to meetings of the kind which cannot be appreciated in England, and accordingly M. LUCAS and other energetic members of the Société have been endeavouring to gain a footing in the Congresses at the Sorbonne. Their persistence has been so far successful that the Minister has decreed that at the next Congress the questions of "Round Churches still existing in France," and "How far Architecture can be made a part of General Education" are to form parts of the programme. It so happens that M. LUCAS has treated of the former subject in the course of an essay on the English Round Churches at Northampton, Little Maplestead, and the Temple Church. M. LUCAS was applauded, as he well deserved.

As we stated last week, Thursday was assigned to a visit to Rouen. But a journey of 250 miles going and coming is not inviting on a broiling day and in a slow train. It is not amazing that so many members declined to take part in the excursion, on the ground that they knew every old stone in the city. Friday was an essentially business day with the Congress. There are always standing committees who have to consider questions relating to competition, education, municipal regulations of building, and the like. The reports have to be often considered before they appear in print and receive the seal of the Society. The members on Friday had an opportunity given to them to hear what was being done. On the same day M. CÉSAR DALY was good enough to speak on education in his most polished style.

But the great day of the Congress was the last. It was known that on Saturday the rewards of the Société were to be delivered, and what more could be needed to fill the semicircular hall? In England a distribution of prizes suggests a meeting of an art school, a long and generally a prosy address by the local member, in which the leading ideas are the achievements of the late Prince Consort and the necessity of holding our position in the markets against foreign competition.—It is not surprising that when another attraction is offered, as happened a few months ago at South Kensington, the orator finds nobody in front of him except the reporters and the youths who want their medals and are impatient to escape elsewhere. In Paris it is different. There the giving and receiving of rewards in public is an institution, and every man of merit takes his part in it a great many times in the course of his life. Virtue is not supposed to be its own reward in France, as it is with us. There are Monthyon prizes in hard cash for the lucky exemplars, and medals and crosses in various metals for others. The Société Centrale of Architects could not hold its position if it did not undertake to assess the respective values of architects, contractors, foremen, and apprentices. A constant competition is going on, and the humblest workman may expect that one day his fidelity to his master is to have its reward, and that for a few moments the applause of a crowd will make his ears vibrate. It is not, therefore, surprising that on Saturday men and women of all classes and of all ages were to be found in the hall, and that enthusiasm prevailed throughout.

It is customary on those occasions to invite some distinguished man to preside, and on Saturday the choice fell on M. ALPHAND. Need we say that in an assembly of the architects, contractors, and building workmen of Paris M. ALPHAND is recognised as the greatest man in the city? If the offices which are so efficiently held by Sir J. W. BAZALGETTE, Mr. VULLIAMY, and Colonel HAYWOOD in London could be combined, they would be far from corresponding with that of the "Directeur des Travaux de Paris." What is done in London by government bodies and public companies is as much under the control of M. ALPHAND as work like that of the engineering and architectural departments of the Corporation and the Metropolitan Board of



Works. M. ALPHAND is also responsible for the supply of water to the city, for the condition of the Seine, for the survey of Paris, for the decoration of the public places, for upholding the amenity of the most beautiful of capitals. He has one department where constant observations are being made by a staff of chemists and meteorologists on the air and water of Paris, and where the movements of bacteria are watched as closely as those of the criminal classes by the Préfecture de Police, and in another department folio volumes are being prepared on the history and topography of old Paris, and the most interesting documents are reproduced. How one man can get through so much business, and such a variety, is a mystery, until an opportunity is given to observe him closely. It then becomes evident that M. ALPHAND has that power of despatch in which BACON took delight as a theoretical moralist. When M. ALPHAND has work to do he does it with all his might, and with his attention rivetted on what is before him. On Saturday he appeared to be the ideal of a chairman for such an occasion. It might have been an everyday occupation. His duty on handing a medal seemed to be as much a pleasure to him as to the recipient. He had something friendly to say to every prize-winner, and grasped the humblest workman's hand with as much vigour as if he had been an old acquaintance. But the men knew well how rigorous the chairman could be if there were departures from equity in contracts, and it may have been a fear of a sudden revelation of their little peccadilloes in municipal works, which made so many of them nervous when their turn came to meet the flashing eyes, and so maladroit afterwards, when exhibiting the medals to their relatives and friends. The chairman never forgot business in his eloquence, and marked off every recipient's name on the programme with as much care as if he had been paying for large contracts.

M. ALPHAND's address was remarkable. He said frankly that he was an engineer who had been occupied all his life with works, and he was not competent to discourse upon abstract questions relating to art. But he proudly referred to his own career as evidence of his appreciation of architects, and of his earnest desire to secure their co-operation. It was impossible, he believed, for any one man to combine the scientific skill and the artistic ability which were needed if public works were to be made worthy of their country, and he insisted on the necessity of the architect; no less than the engineer, being represented in civic constructions. It was the adoption of that principle which made Paris what it is now, and in other countries, where an attempt was made to fuse the two professions, the result was never satisfactory. The superiority of French architects was seen in the Hôtel de Ville, the Palais de Justice, the Opéra House, and other buildings. The books of VIOLETTÉ-LE-DUC suggested what they were as archæologists. The French engineers could likewise point to their own trophies. It was better for them all to respect their traditions and adhere to that division of labour of which they knew the value. But the engineer should summon the architect to give beauty and harmony of contour to his construction, and the architect should not hesitate to have recourse to the engineer whenever scientific principles had to be applied. M. ALPHAND said that it was an honour to him to have his name associated with those of so many famous architects in beautifying Paris. With their support he had been enabled to ameliorate regulations which, if enforced literally, would have made the houses as dreary as so many barracks or factories, and architects knew that in his department the law was interpreted in a broad and liberal spirit. Then, glancing at the economic side of the subject, M. ALPHAND said there never was a time in which it was more incumbent on the two professions to be united, and, hand in hand, to take their place as the rightful directors of labour. There were erroneous notions abroad. The workmen were co-operating, but in doing so they ignored how much was owing to skilful planning and direction, and to capital. All the gains were supposed to belong to the operatives, and none to the artist or the capitalist. But M. ALPHAND recognised the advantages of co-operation, which he said merited their encouragement, and it was their duty to foster the just aspirations of their fellow-men. They should all bear their share to help their country until the time came when France

would arise more glorious than ever, and assume the position that belonged to a nation which had shed the blessings of liberty and civilisation over the world. An address of this kind, in which every word bore the mark of sincerity, was received rapturously, and perhaps some may have thought how different must have been the fate of their country if in 1870 the army had been administered by their chairman instead of by a luxurious man named LEBŒUF.

Mr. L'ANSON attended the meeting as the representative of the Royal Institute, and read a short address in French in a manner which surprised Frenchmen, as they could detect no trace of that insular pronunciation which they have so often to endure. Mr. L'ANSON expressed the great interest which English architects take in the Société, and condoled with the members on the loss sustained by the deaths of two eminent members. M. ABADIE's restorations at Angoulême, Périgueux, and Bordeaux were known, he said, to English travellers, as well as his work at Montmartre. They also admired the churches and Hôtel de Ville designed by M. BALLU. Mr. L'ANSON exhibited the diplomas for M. ANDRE and M. HERMANT with which he had been entrusted, and his references to the good feeling which was held towards French art in England were loudly applauded.

A biographical notice of M. ABADIE was read by M. DAUMET. It showed that truth is stranger than fiction, as in his infancy ABADIE was tended by wilder fellows than the miners in Mr. BRET HARTE's story of "The Luck of Roaring Camp." His nurse ran away during the invasion of 1812, and he was picked up by a band of Cossacks, who looked after him until he was discovered. His father was also an architect, and having been appointed departmental architect of Charente in 1818, the family removed there. Young ABADIE returned to Paris in 1830, and entered the Ecole des Beaux-Arts. He tried for the Prix de Rome in 1839, but failed against LEFUEL. He was attached to the works of the Hôtel des Archives, and afterwards held a position under the Council of Civil Buildings. On the same day two inspectorships were offered to him. One was at Notre Dame under LASSUS, with VIOLETTÉ-LE-DUC for a companion, the other was at the Chamber of Deputies. He made his selection by hazard, and accepted the former post, his rival, LEFUEL, taking the other. Afterwards he was appointed to the Commission of Historic Monuments, and diocesan architect for Angoulême when his father had gained a reputation. In his activity he resembled many French architects. He became Inspector-General of Religious Edifices, and his reports are valuable as archæological essays. At the last Congress he conducted the members over the works of his great church at Montmartre with the greatest delight, and looked forward to its completion with confidence. But two months afterwards the brave architect succumbed to a sudden attack.

The report of the Commission who awarded the prizes for "Architecture privée" was read by M. SÉDILLE. The first medal was awarded to M. ESCALIER. It may be difficult to combine the duties of an engineer and an architect, as M. ALPHAND pointed out, but M. ESCALIER has shown that a man can gain renown as a painter without ceasing to be a thoroughly practical architect. Last year he obtained one of the principal medals of the Salon for an immense decorative picture, and the companion work exhibited this year is no less remarkable. Another medal was awarded to M. HERMANT, who had been seated near the chairman. This gentleman is one of the new corresponding members of the Royal Institute. A third medal was gained by M. MARTENOT, of Rennes, and diplomas for jurisprudence and archæology by MM. LUCIEN ETIENNE and R. P. CROIX. All the recipients are men of standing in the profession, and were as proud as young students of their success.

An elaborate report on the remaining eight classes had been prepared by M. PAUL WALLON, and was read by him. It will suggest the position held by the Société, when we say that there were competitions for the rewards among the French schools of Athens and Rome, the Ecole Nationale des Beaux-Arts, the Ecole Nationale des Arts Décoratifs, and Ecoles Privées. M. LALOUX, of the Roman school, who is the fortunate winner of the great prize of the Salon this year, obtained one of the medals. In art industry, M. GUILBERT-MARTIN was the prizeman. He is a chemist,



and has taken up mosaic work with great success. Then came the rewards to apprentices, to stone-cutters, to contractors, and to workmen. In the section of "Personnel du Bâtiment" there were eighteen medals, and, indeed, as M. WALLON said, the Société in its action resembled what took place daily, and it became more generous as it became poorer. Some of the men had spent nearly forty years with the same firm, and those long services are among the phenomena of French life. M. WALLON is sympathetic, and he narrated the biography of the individual prizemen with evident interest. He is proud of his office, and it is evident that the members are no less proud of him and of the sacrifices which he makes to insure the success of the Society.

The business of the meeting was closed with a brief address by M. QUESTEL, to whose credit it must be said that throughout the proceedings he endeavoured to gain applause for everybody but himself. His action as President was no less marked by modesty than by dignity.

In the evening there was the annual *dîner confraternel* in the Hôtel Continental. M. QUESTEL presided, and opposite him sat Mr. I'ANSON, with M. ALPHAND and M. GARNIER. Mr. I'ANSON spoke happily. On those occasions it is always a treat to hear M. GARNIER'S humour, but his good things cannot well be repeated; for, as he said once, "C'est le ton qui fait la chanson." And thus in the best of spirits the members who took part in the Congress separated.

## NOTES ON SOME PROVINCIAL CHURCHES.

[BY A CORRESPONDENT.]

THERE are many peculiarities in Cornish churches which have been commented on by other writers, so I must content myself with but a slight summary of them, viz., the nave and chancel all under one continuous roof; the span-roofed aisles nearly as wide and as long as the nave; the plan comprising sometimes a nave and south aisle and one arm of the transept; the chancel screens, which extend or have extended over the whole width of church, as shown by the upper and lower doorways in the aisle walls; the characteristic roof with principals, having collar beams and braces. In the neighbouring county of Somerset I also remember two such examples of screens, at Long Ashton and Keynsham Churches. The frequent occurrence of wayside crosses of simple design, one very much like another, is one of those pleasing features that must strike the traveller in Cornwall; they are said to have been erected wherever a corpse was rested. The stone lich-gates, a sensible material to employ in a county where timber was scarce and stone or granite abundant, are also noteworthy. I call to mind a good example at St. Levan, near the Land's End, where there are two lich-gates, though the church is a small one, looking almost buried in the side of a hill at the chancel end, a curious site to have chosen, but one, I believe, not uncommonly selected in Cornwall. In the centre of the gateway is a block about 20 inches high, shaped like a coffin, on which the corpse was rested, and on each side a granite seat, with ends and backs to it about the same length as the central block. Speaking of the church roofs, in several instances the space between the ashlar pieces of the nave and aisle span roof is left quite open, with good effect. The elegant spire of Lostwithiel Church is well known by illustration, so I will only remark how very effective is the double plane of tracery to the spire lights, causing such depth of shadow. In the same church the arrangement of the piers to the nave arcade (the only one I know of Early English date, though there may be other examples) has two chamfered orders dying on the piers without any abacus or string. This is more characteristic of Flamboyant than thirteenth-century work.

In some of the handsome old bench-ends in Cornwall the emblems of the Passion are represented, appropriate enough decoratively when on a small scale, but not so when the dimensions are large, owing to the undecorative character of some of them—the lantern, hammer, &c., for instance. At Launceston Church, and also at the parish church at Truro (now pulled down and incorporated with the new cathedral), there was an extraordinary amount of carving in the granite, every stone in some parts with scarcely an atom

of plain surface. It can scarcely be called a diaper, for though the same pattern is often repeated, yet there are considerable minor variations in the design. The richness here is the more remarkable, because generally in Cornwall very little work was applied to so hard a material as granite. The porch to the interesting church at St. Neot's, in this county, has a barrel vault of unusual design, having remarkably massive ribs with diagonal ribs also.

In Northamptonshire, though there are some very choice examples of Early English work, there are also several specimens, as at Higham Ferrers, Irthlingborough, and Warmington, of that very ungraceful type of thirteenth-century window verging on the Decorated, when incipient tracery was budding, the heads of the lights straggling up into what ought to be the domain of the tracery. At Rushden Church, in the same county, the arches of the Perpendicular windows "are four-centred, but yet in some instances acutely pointed, and the windows themselves of considerable height, the upper segments being not distinguishable from straight lines. The tracery begins considerably below the spring of the arch, and is often divided into stages by transoms, sometimes embattled, or by uniting two lights under one arch, so as to form a row of quatrefoils. Though these windows are constructed on a principle contrary to the commonly received ideas of beauty, it cannot be denied that the general effect of them is rich in the extreme." ("Churches of the Archdeaconry of Northampton," p. 178.) I may remark in reference to this that in foreign examples, as at Beauvais and elsewhere, the tracery of the window-head is brought below the springing line. Our usual English treatment of commencing it at the arch springing line seems more elegant and sensible. It is true that by the other a larger area for tracery is obtained, but to the detriment of the remainder of the window. The detached campanile to Irthlingborough Church, octagonal in plan in its upper storeys, is a very striking object. One regrets to hear that it is, or was, in a dangerous state.

At Westbury Church, Wiltshire, a building principally of the Perpendicular period, is a remarkable and almost unique treatment, in England, of the nave aisles—i.e., a transverse arch springing from each nave pier on to the aisle wall at the same level as the abacus of the nave capitals. In order to make this arch as wide as possible, the mouldings interpenetrate those of the nave arcade, as in Flamboyant work. The outer order is continued above the nave side, upwards in half of the arch, in an ogee form. The vista of one cross arch after the other in long perspective is very good, but the roof of each bay in the lean-to aisles is but a poor one, with plain ribs. These transverse arches seem to demand a nobler treatment to the roof. One would like to see a kind of domical stone vault to each bay, in the style of that to the aisles of Bristol Cathedral, but of course simpler.

The fine parish church of Ryde rather lacks height. I understand that, in the original design, the late Sir GILBERT SCOTT intended it to have been of more lofty dimensions; but, in order to save money, the height was cut down. One cannot but think that another way of reducing the cost might have been found by placing two-light windows to the aisles, instead of the elaborate three-light windows, which seem too pretentious for a parish church. The pulpit is a beautiful one, in which different kinds of marble and alabaster are employed. The introduction of two saints in each of the square-headed panels—St. STEPHEN and St. ALBAN among others—is a change from the four Evangelists so usually decorating such positions. It is right that the lesser lights of ecclesiastical history should have their turn in our church sculptures. The organ-case, when I saw it, had spotted metal pipes, without any bands or woodwork in front of them, and looked, to my mind, quite as well as if it had a quantity of *appliqué* woodwork. It has a handsome oak "impost," evidently designed by the architect of the church. The chancel is well decorated in colour by Messrs. CLAYTON & BELL. But the oak credence and sedilia are evidently designed by a different and less skilled hand than the rest of the fittings of the exquisitely-furnished sanctuary. The beautiful gas pendants, close by, teem with cunningly and artistically devised wrought-iron work. The reredos contains representations of the Crucifixion in the centre, with other subjects at the sides. The evangelistic emblems are brought in in star-shaped panels, with



good effect. I think the manner in which gilding is sparingly introduced in the reredos, for the arch-mouldings, crockets and pateras, is particularly successful, while the plain surbase, with a gilt incised foliated pattern, is equally happily devised. The chancel has a polygonal trussed rafter roof as far as the sanctuary, where a bold, pointed arch, formed by two ribs enclosing a panel occurs. This panel is embellished with figures of the twelve Apostles, executed on the plain unpainted surface of the wood. Further eastwards the form of the ceiling is that of a pointed barrel, divided into geometrical panels.

In the well-known church of the Holy Trinity, Windsor, the chancel floor is considerably above that of the nave, so that space beneath it is obtained for a choir vestry, access to which is gained by a few steps down. This is not a bad notion, as it economises space and saves expense. At the grand old parish church of Wrexham, North Wales, where the ground falls towards the east, there is even greater facility for the vestry under the chancel, which, however, originally was probably not used for that purpose, but for a crypt or subsidiary chapel.

At the interesting church of Pewsey, Wiltshire, the piers of the nave arcade are apparently of transitional Norman date, and above them is a Perpendicular clerestory. There are no capitals to the piers (which are stop-chamfered at the angles) but only an abacus. The wall over, instead of being thicker, is rather thinner than the piers. The effect of massiveness caused by this uncommon treatment is good, but necessarily unsuitable for congregational worship.

The fine parish church of Crewkerne, Somerset, with its immense windows of the fifteenth to sixteenth century period, has about the most imposing west front of any parish church in the county. The semi-octagonal turrets flanking the nave, the elegant panelling over the west doorway, and the sculpture around it, are all remarkable. There is an elliptical stone roof (externally of flat pitch, and covered with stone slates), with panelled tie-beams. The tie-beams to the flat ceiling of the aisles are also of stone, a curious though by no means beautiful conceit. The great and unusually wide arches of the nave have been much admired on account of their lightness. In my humble judgment they look flimsy, for the walls carried by this arcade are of insufficient thickness. The views from corner to corner, or across the church internally from different points, are telling, though for the worship of the Church of England, the central tower with its massive piers, and the transepts of such great projection, also the chapel at the north-east inner angle of north transept, are not at all suitable.

No one examining the new nave of Bristol Cathedral can fail to be struck with the remarkable treatment of the vaulting to the aisles. It may be reasonably surmised that the object of this peculiar design was to prevent the aisles looking disproportionately high. Though nearly the same height as the nave, they are much narrower. The species of stone beam to each bay reduces the apparent height as the spectator faces east or west. These features were also, no doubt, intended to help to play the part of the usual flying buttress. *Mutatis mutandis*, they really serve that purpose. If they had not been there the thrust would have been only partially conveyed from the nave on to the aisle walls by the transverse ribs of the groining.

There is a little church, built a few years since, at Wenthorpe, near Wakefield, which has some novel points worth mentioning. The funds at the disposal of the architect were meagre, so that he had to get the best effect possible with but poor resources. The nave is 30 feet wide, and a recess at the east end serves for the sanctuary. There is no chancel arch, as a wooden screen is a substitute for it, which is carried up to the top in the form of a traceried truss. This looks well, and one does not miss the more usual feature. All the screens, doors, and woodwork, externally and internally, were, when I saw the structure, painted—the screens green, the seats of a dull red colour—with enamel paint, which does not require to be varnished. The chamfered outline of the bench ends is not graceful; a little less severe form would have cost but a trifle more. The bookboards are tilted inwards, thus preventing books being readily swept off. A continuous row of hat-pegs, like what one sees in the churches of the seventeenth and

eighteenth century, was placed under the window-sills on the men's side, for the ancient custom of separating the sexes in this church is adopted. There are also return-stalls to the chancel. The bell-turret is painted white. The object of painting the woodwork internally was probably for the sake of economy, as timber, &c., of inferior appearance could thus be used. This building shows how much can be done, even with small funds at disposal, where pains are taken.

At Cheddar Church, restored a few years since under the direction of Mr. Butterfield, the backs of the oak benches next passages are not designed with ornamental, cusped or traceried framings, as is so often done, but rather a new departure has been essayed. There are only square moulded panels, two panels high, the upper divided into three, the lower all in one. This, plain as it is, really looks well. The solid bench ends are ornamentally panelled, both old and new, but are all exactly similar. This is very unlike most Mediæval churches, where every bench end is of a different pattern, as at Stoke-sub-Hamdon, Thorne Falcon, and many other examples in the same county.

At the parish church of Easthampstead, Berks, standing on an eminence in a beautiful situation, and rebuilt about the year 1865, is some remarkable painted glass of the MORRIS school in the east window, representing the *Last Judgment*. In the large six-foiled circle in the upper part of the tracery is our LORD sitting as the Judge, with severe aspect. In the six foils are angels with their hands before their faces, as if in fear or awe of the Divine Presence. Beneath is St. MICHAEL arrayed as a knight, with the scales in his hands to weigh souls. At the feet of St. MICHAEL are three angels clothed in white. On either side of the archangel, but in a rather lower part of the tracery, are representations of angels blowing trumpets (which unfortunately, by-the-by, resemble long cowhorns, and so have rather the effect of an anti-climax!). In the lower portion of the window we see the dead rising from their tombs. I cannot but think that, as a rule, the representation after the Mediæval fashion of the scene is rather a mistake. For it needs to be treated, being so full of difficulty, with consummate art and, withal, most reverentially, or it is little better than a travesty of the feeling of the Middle Ages, more likely to provoke derision than inspire solemn thoughts. On the other hand, I must admit that if no effort of the imagination is made in this direction, the field of religious decorative art becomes much narrowed, and it is even better to follow ancient precedent than to strike out altogether a new path, the attempts at which have been not unfrequently very unsuccessful hitherto, and do not as yet appear promising. Considering this is the east window, St. MICHAEL occupies rather too conspicuous a place in it. There are, I venture to say, two blemishes in the composition of the tower of this church. The upper part of the stair turret, with pyramidal top, springs from just inside the parapet, a little set back from it. Consequently it forms no architectural feature, and the effect is not good. Again, each side of the belfry stage of the tower is divided into three panels, the central one being blank, with a quatrefoil in the tympanum of each arch, and the side panels pierced to form windows. I cannot call this pleasing—a panel occupying the central position or place of honour in the width of a tower. Either a pier or a proper perforated opening should be here. As far as my knowledge goes, I am not aware of any Mediæval precedent for this treatment.

## THE SCIENCE AND PRACTICE OF VENTILATION.\*

By ROBERT BOYLE, Ventilating Engineer.

(Continued from page 348.)

**A**UTOMATIC exhaust ventilators, that is to say, ventilators depending upon the wind for their action, may be divided into two classes—fixed and revolving. The Air-pump ventilator may be taken as a fair sample of the first class, the advantages of which are that it has no mechanical movement, cannot get out of order, requires no attention, and there is no after expense to keep it in action.

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What is known as a "Louvre" or "Luffer" ventilator was at one time very extensively used before improved forms of ventilators were introduced, but this was simply because there was nothing better to be had, not that it in any superlative way answered the purpose for which it was applied, as owing to its construction, which was evidently designed more with a view to excluding rain and snow than inducing an upward current, it deflects air down into a building instead of drawing it out, or even permitting the vitiated air to escape. It is rarely now that this form of ventilator is to be seen on any new building, with the exception, perhaps, of sheds and other such structures, where down-draughts are of no consequence. Another form of ventilator that has also in its day been extensively used, is what is known as the "Syphon" ventilator. In its original form it consisted of a tube, divided down the centre with a partition. In a later adaptation two tubes were used, one inside the other, the inner tube having its top projecting above that of the outer one. The theory of this arrangement was that by syphonic action the hot vitiated air would pass up one division or tube, and the fresh cold air down through the other division or tube. It was found, however, in practice, that the cold air, oftener than not, passed down through both divisions or tubes at the same time, but whichever way it acted, rightly or wrongly, the result was the same—*i.e.* a continuous down-draught on the heads of those sitting beneath.

This principle should never have been employed in such a form for the purposes of ventilation. Of revolving ventilators nothing need be said; their day is over and their doom is sealed—and not a moment too soon either—their extreme liability to get out of order, make a noise, and act the reverse of what is desired rendering them rather a nuisance than otherwise. In all properly-constructed roof ventilators the extracting or working power lies exclusively in the head, or that portion of it which is exposed to the wind, the diameter of the pipe having nothing whatever to do with or adding in any way to the extracting power of the ventilator. What is meant to be conveyed is, that if an Air-pump ventilator or any other form of roof ventilator, say 2 feet in diameter, is fixed on the top of a 12-inch pipe, it will of itself extract no more air through a pipe of that diameter than it would through a 9-inch pipe, allowance being made for the greater friction in the smaller pipe, which in short lengths need hardly be taken into account, as the gain does not compensate for the increased outlay incurred and space taken up by the use of larger pipes. Any one who asserts that the extracting power of a properly-constructed roof ventilator does not depend upon the size of the head, but upon the diameter of the shaft that can be attached to it, must be deplorably ignorant of the action of such ventilators and of the purpose for which different sizes are used, as according to this theory you have only to have a sufficiently large pipe, and you can put on the top of it as small a ventilator as you please, as the extracting power does not depend upon the size of it at all, but upon the size of the shaft. If this were really so, where in the name of common sense would be the necessity for using roof ventilators at all, and especially large sizes, if they do not of themselves extract the foul air in exact proportion to the size used, which every properly-constructed roof ventilator should do and does do, quite irrespective of the diameter of the shaft attached to it?

A simple mode of extracting the vitiated air from a room is to utilise the draught in the smoke-flue by fixing a mica flap valve in the chimney-breast just under the ceiling. When the fire is on, and there is a good draught in the chimney, the plan is found to answer very well; but in the summer, when the fires are off, it is not quite so effective.

It is a grave mistake to depend upon the fireplace as the sole means for the exit of the vitiated air, as in cold weather, when a fire is used, the occupants of the room generally gather round it, and get the full benefit of the foul air and products of combustion as they are drawn from the different parts of the room, and pass into and up the flue. They are sitting, as it were, at the mouth of a foul-air shaft, where the air inhaled must certainly be anything but fresh and pure.

The products of combustion should be removed directly from a room, and not be permitted to mix with the air, as there is nothing tends to vitiate the atmosphere so much

or render it disagreeable and injurious to health. "The effect of breathing the products of combustion are easily determined. In proportion to the amount of the contamination of the air, many persons at once suffer from headache, heaviness, and oppression" (PARKES).

BOYLE'S concentric tubes, applied over the lights and led into a ventilating shaft surmounted with an Air-pump ventilator, effectually remove the products of combustion as they are generated, and also draw off the heat arising from the gas, keeping the room as cool and sweet as if gas was not being burnt at all.

Windows in cold weather are always a source of descending cold currents, such descending currents being a common source of discomfort and disease, particularly rheumatisms, colds, and inflammations. No cause of complaint is more frequent in public buildings, and in all situations where large windows are introduced. Double glazing is the only effective remedy for this, but benefit may be derived by the introduction of heat underneath the windows. The fresh air supply should never be admitted at the floor-level, as, no matter what means are employed to break the force of the current, it is found to continually blow the dust and other impurities lying on the floor up into the air, which is both disagreeable and unhealthy. The temperature of the air at the floor-level in cold weather would also be dangerous to health. Different forms of ventilating air-bricks have been introduced from time to time, but the same objection applies to them all when used as above described. A simple method of admitting air is to raise the window about 4 inches, insert a cast-iron grating in the opening, and fix a glass shield in front the full length of the window, and from 15 to 20 inches deep. The air passes in and is deflected upwards the same as in the vertical tubes.

The great difficulty which existed until recently was to admit air in cold weather without disagreeable draughts being felt. That difficulty has now, however, been satisfactorily overcome since the introduction of an arrangement known as "BOYLE'S Improved Fresh-air Warmer," a simple and economical method of providing a supply of fresh air at such a temperature as will be both safe and agreeable in all seasons of the year. The arrangement consists of a copper or iron pipe, from 1½ inches diameter, placed in an air-inlet tube, preferably of the form of a bracket. This pipe is made of zigzag shape, so as to cross and recross the tube from top to bottom, causing the incoming air to repeatedly impinge upon it in its passage through the tube. At the bottom of the tube an air-tight chamber, so far as the interior of the tube is concerned, is fixed, in which a "Bunsen" burner is placed, the flame of which plays up into the bottom end of the pipe which is connected with the top of the chamber. The heat travels through the entire length of the pipe, the other end of which may be made to dip into a condensation box in the bottom of the tube, or be continued up into the flue or extraction shaft. If the pipe terminates in the box, the vapour is condensed there, and is run off through the inlet opening in the wall by means of a small pipe, and any products of combustion which may be evolved are absorbed and rendered innocuous by passing through a loose bed of charcoal, which covers the bottom of the box. The charcoal should be renewed about once a fortnight or month, according to the extent the tube is used. Where these tubes are placed against woodwork all chance of firing may be avoided by fitting them with a double casing or jacket, and filling in the space between with asbestos or other non-conducting substance. With this arrangement the air supply can be raised from a temperature of 30° to 130°, and to show that it is one of the most economical methods of heating at present in use, it is only necessary to mention that the cost of gas consumed to raise the incoming air from a temperature of 40° to 100° is less than one farthing per hour, this being effected with the air passing through the tube at a velocity of 300 feet per minute, or 18,000 feet per hour.

At the Reform Club, where these tubes and heaters, in combination with the patent Air-pump ventilators, have been very successfully applied, a series of experiments were carried out by the Right Hon. ACTON SMEE AYRTON, ex-Chief Commissioner of Works. The results of these tests demonstrated that the apparatus was not only useful for



warming the air supply for the purpose of ventilation, but that it might be used as the sole means of heating rooms. On testing the tubes with the anemometer, the air was found to be passing in at the rate of 16,000 cubic feet per hour, the dimensions of the tube being 24 inches by 16 inches by 6 inches, one-third of which was blocked up with the heating-pipes. It is important to note that these figures compare most favourably with the results obtained by elaborate and expensive arrangements for artificially forcing air into a room by means of water-fans, sprays, &c. The tubes are fitted with regulating valves and deflecting shields to prevent the air from discolouring the walls. They can also be fitted with an arrangement for filtering and freeing the incoming air from blacks and dust.

They are applied to a large number of buildings, including the Guildhall, Lloyd's, Royal Exchange, and Dartmoor Prison, and have been found to answer exceedingly well. The great objection to nearly all methods of admitting fresh air is the disagreeable cold draughts they create. The appliance described effectually overcomes this, and should therefore be welcomed as a really valuable addition to the list of useful sanitary inventions which are now in use.

A simple way of reducing draughts from doors and windows is to supply the fire with the air necessary for combustion direct from the external air, which can be done by leading a small pipe behind the skirting-board or beneath the floor, from an opening in the outer wall into the fireplace in front of or underneath the grate. A supply of warm air may also be admitted to the room by making a similar opening behind the grate, with pipes leading into the mantels and penetrating at the top.

An arrangement for cooling the air-supply in hot weather, known as "BOYLE'S Fresh-air Refrigerator," and which has been found to be very efficacious, consists of an air inlet tube of bracket form, made of iron. The part which penetrates the hole in the wall has an outer casing, so that a space of about half an inch is left between which is packed with a non-conducting substance for the purpose of preventing the heat from the wall penetrating into the interior of the opening, and acting upon the blocks of ice which are placed in a movable drawer, and kept in position by means of open galvanised iron or copper wire netting. The front of the drawer is also double, and packed the same as the casing. The outer air entering through the grating is deflected by a metal shield on to the suspended blocks of ice, and from thence on to the ice at the bottom of the drawer and up the tube into the room, it being not only cooled, but purified thoroughly from blacks, dust, &c. This arrangement would prove very acceptable in our fashionable London drawing-rooms during the season. There are many different contrivances in use for purifying the air as it passes into a room, and freeing it from blacks and other impurities; but a coarse canvas strainer with a pretty open mesh, placed in the inlet tube, is about the best, and certainly the simplest and cheapest, form that can be used. It should be taken out and cleaned with a brush at frequent intervals, otherwise the blacks and dust will stop up the meshes and obstruct the passage of the air.

(To be continued.)

### THE LATE PROFESSOR FLEEMING JENKIN.

ON Friday morning last week the death took place of Professor Fleeming Jenkin, Professor of Engineering of the Edinburgh University, from blood poisoning, after a surgical operation of a comparatively trivial kind. The *Scotsman* says:—It belongs to an expert only to indicate with any completeness the services of the late professor to practical science. He was the only son of the late Captain Charles Jenkin, R.N., of Stowting Court, Kent, and there he was born in 1833. His first schools were at Jedburgh and the Edinburgh Academy. His next was at Frankfurt-am-Main. When again still at school, in Paris in 1848 he witnessed the Revolution of that year. He then attended the University of Genoa, where he took the M.A. degree; and eventually he began the engineering career, which he was to follow so successfully, in a locomotive shop at Marseilles. This various training, while not without other and even more important results, gave him that mastery of three modern languages which was to stand him in

good stead when called on to act as a juror in international exhibitions. In 1851 he returned to England, and was apprenticed to Fairbairn's, in Manchester, for three years. His progress was henceforward rapid. In 1857 he had to do with the manufacture of the first Atlantic cable, and while engaged on this work the electrical testing was put under his charge, the first indication of a line of research with which his name afterwards became so closely connected. In 1859 he was elected an Associate of the Institution of Civil Engineers, gave evidence before the Royal Commission on Submarine Telegraphy, and, at the suggestion of Professor (Sir William) Thomson, began to write on scientific subjects. Professor Jenkin was elected a Fellow of the Royal Society in 1865, and in the same year was appointed Professor of Engineering in University College, London—a post that he held until his appointment, in 1868, to the newly-instituted Chair of Engineering in the University of Edinburgh. During the seventeen years of his tenure of the chair, he has been much esteemed and respected by his students. Many parents and guardians have had reason to be grateful for advice promptly and freely given them as to the training of sons and wards for the profession of engineering. His method of teaching may be summed up in that quality of "thoroughness" which he so strongly insisted upon in a lecture to the students at King's College last year—a quality that distinguished every action of his own life, the preparations for a pleasant social gathering of his students as much as the conduct of his most intricate experiments. The interest that he showed in his students was continued in their after career. Not a few are indebted to him for their first start, and many with whom he made a point of keeping up a correspondence in various parts of the world will feel when they read of his death that they have lost a great friend.

### YORK ART INSTITUTION.

THE summer exhibition of pictures at the York Fine Art Institution was opened by the Marquis of Lorne last week. In the course of his address, the Marquis said he was a little bit sorry that he had had no opportunity in walking through the galleries just then of seeing any of the examples of that school of art in York, but perhaps it might be possible in course of time to show what attention had been given to those studies by having the work of the students exhibited in that building. Perhaps it might be of advantage to centralise as much as possible all artistic efforts, and to make a school of art one of the galleries for exhibiting the works of older painters. He was told that this was only a question of money, but when they had said that they had said sufficient, for, after all, in such a rich community as Yorkshire, it was surely possible to have not only a great permanent building, able to hold in a permanent way the works of art, but to have connected with it also galleries in which students might work on their tasks. He hoped they would do all they could to encourage artists to exhibit in York, and to make their galleries as good and as beautiful a home for art and as attractive to the general public, who might come to purchase pictures, as possible. With regard to localisation, he was struck the other day in the north by the efforts made by a hotel-keeper to keep works of art in his own country instead of their being sent to London. It was an example that might very well be followed by others. The hotel-keeper had a natural love of painting, and what he did was to get all his artist friends and acquaintances to send him their pictures. He hung the pictures up in the rooms of his hotel; they were a great pleasure to himself; they were seen by the tourists who stayed there, and in this way he provided a market for the works while he adorned his house. In Yorkshire they might find a good market in their hotels for much of the local talent. Perhaps within the last few years the encouragement of architecture had improved a great deal more than had the encouragement of painting. We saw great buildings put up by municipalities and county authorities which were charming in their elevation. He did not know that they could see so much encouragement given by the municipalities to painters; but there were in our public buildings large wall spaces that might be well adorned with representations in painting of the history of Yorkshire or the beautiful scenery which the county largely possessed. He hoped that the corporations would in the future do as much for painting as they had lately done for architecture. He might venture humbly to ask the corporations and municipalities of Yorkshire to consider for a moment whether they might not benefit native talent by giving an occasional commission to a Yorkshire artist. He could only express a hope that their buildings would be thoroughly worthy of a Society whose beginnings were laid by the great painter Etty, and of a community which could boast as one of its representatives in the art world of London the distinguished artist Mr. Moore, and of a county that could claim as one of its citizens the President of the Royal Academy, Sir Frederick Leighton.



## NOTES AND COMMENTS.

At the meeting of the Architectural Association last week, Mr. SOMERS CLARKE brought forward an important matter. He made a communication to the members in which he outlined a scheme for a monograph on Westminster Abbey. If all goes smoothly, and the consent of the authorities and those concerned is obtained—as seems likely to be the case—the work is not likely to languish for want of willing hands to do a share, and a most important and honourable share, in the work, in the making of the measured drawings. The work is intended to be one that will be worthy of taking its place as a national record of perhaps the most famous and beautiful of our historical buildings. The present is an occasion for carrying out the scheme which may not occur again, seeing that the necessary scaffolding is now there, and that at no time probably could an appeal for volunteers to measure and make the drawings be expected to elicit so favourable a response as at present in regard of numbers, and also in regard of skilful work.

THE question left unsettled at the previous meeting of the Architectural Association—namely, Mr. COLE A. ADAMS'S motion for increasing the annual subscription of members from half a guinea to one guinea—was decided at the meeting on Friday evening last week by a rejection of the proposition with a majority of nine votes. Those who were in favour of increasing the subscription gave every facility to their opponents of stating their views. Indeed, the opponents of Mr. ADAMS'S scheme did most of the speechmaking of the evening, and many amendments were started, some of which were out of order, others withdrawn, and the rest fell to the ground by being lost when the vote was taken. On the voting for the main question, however, that in turn fell to the ground and was lost. Time will show whether it has not been for the best that the proposition of increasing the subscription was lost.

THE new prison of Saint-Gilles at Brussels is on the plan which was introduced in England. The five divisions are arranged like the spokes of a wheel around a central observatory, and are appropriated to different classes of prisoners. Special care has been taken with the chapels, of which there are three, for Hebrews, Catholics, and Protestants. The seats are disposed in such a way that the prisoners have no means of communication. The Catholic chapel was opened on Sunday last.

THE committee which has been formed for the purpose of providing a memorial to the late Sir JOHN GOSS, organist of St. Paul's, of which Sir ARTHUR SULLIVAN is the chairman and Mr. T. L. SOUTHGATE the hon. secretary, have selected a design by Mr. JOHN BELCHER for the monument in the cathedral. A bas-relief, representing choristers singing, by Mr. HAMO THORNYCROFT, A.R.A., forms part of the design.

IN consequence of an invitation from the Lincoln Corporation, Mr. J. L. PEARSON, R.A., has visited Lincoln to advise with respect to the proposed improvement of the Stonebow. With Mr. F. J. CLARKE, the mayor, and Mr. R. A. MACBRAIR, the city surveyor, he proceeded to inspect the ancient gateway in question. Having had his attention directed to the question of the stability of the structure, Mr. PEARSON came to the conclusion that, although perhaps some settlement might have taken place after the carrying out of the main drainage works, yet he was of opinion that the structure had now got to its bearings, and would settle no more. With regard to bringing the surroundings into harmony with the Stonebow, Mr. PEARSON has promised valuable assistance in the way of sketches showing what should be done.

THE following remarks on planning laboratories and their fittings for technical schools are made by Captain ABNEY, F.R.S.:—"I have not found that most towns differ much from Little Peddlington, where local wisdom invariably asserted itself as pre-eminent. The consequence is that it has often been my duty to direct alterations to be made which would have been saved had the rule been

attended to. There are several cases in which non-compliance has caused the greatest inconvenience. For instance, there is a laboratory recently erected which has slavishly copied the fittings of a neighbouring laboratory which is anything but satisfactory, not omitting their most glaring defects. As another example, there is a laboratory in which a grant in aid of the fittings has had to be refused, simply because the minimum dimensions necessary for benches had not been adhered to. In these cases the local committees have no one but themselves to blame for any loss or expense to which they may be put." Local committees, however, and local boards who indulge in carrying out building operations without architects, drainage schemes without engineers, as a rule do not suffer much expense. The cost comes upon the ratepayer, otherwise local bodies would have learnt experience long since.

SOME details of interest are given in the report of the Commissioner of Public Works, Chicago, for the year ending December 31 last, issued last month. About twenty-five miles of water-pipe were laid during the year, making a total of over 543 miles now in use. The water supply for the year was 29,286,000,000 gallons, a daily average of over 80,000,000 gallons. Nineteen miles of brick and pipe sewers were laid during the year, making a total in use of 414 miles. Thirty-four miles of roadway were paved during the year, making a total of 224 miles of paved streets in the city. Twenty-eight miles of new side-walks were constructed, making a total of 804 miles now in use. An aggregate of 2,225 miles of streets were cleaned during the year. The aprons, crossings, culverts, &c., built numbered 4,817, and 1,703 street lamps were erected. The buildings moved numbered 726. The maps and plans made aggregated 1,610. The special assessments prepared numbered 468. The miscellaneous work included the Rush Street bridge, iron viaducts at West Twelfth Street, Centre Avenue, Chicago Avenue and Halsted Street, the completion of the new City Hall, and the dredging of the river. The total number of contracts for the year was 341, and their aggregated cost 2,589,138 dols.

No visitor to the Royal Academy should omit to see Messrs. BELLMAN & IVEY'S New Art Galleries, 37 Piccadilly, where a very fine collection of sculpture by Mr. NELSON MACLEAN is on exhibition. It includes works in terra-cotta, in marble, and in bronze; works of all sizes, from the small statuettes which are intended to be the ornaments of the bookcase, or the cabinet, up to the large life-size group of the *Spring Festival*. In bringing the collection together, a main object has been to show that sculpture in England has not yet had a fair chance, and to convince those who are interested in art that the work of the sculptor is just as appropriate for the decoration of the ordinary English room as is the work of the painter or the engraver. In France, and perhaps in other countries, there would be no need to put forward such a plea in favour of sculpture. Partly, no doubt, through the influence of their finer climate, partly through their more instinctive delight in form, and partly through their possession of a whole historical series of great sculptors from the days of JEAN GOUJON down to our own, the French have always placed the sculptor's art fully on a level with that of the painter. They have seen that beauty dwells as much in plastic form as in coloured surface, or in the intricacies of light and shade. And we have no doubt that by popularising the sculptor's art by such exhibitions as Messrs. BELLMAN & IVEY'S, the time will come when sculpture will be as universally admired in England as on the Continent.

THE place of honour in their gallery is occupied by a very beautiful marble group entitled *The Spring Festival*, consisting of two dancing girls, life-size. The work exhibits an entire absence of conventionalism, has been worked direct from the living models, and is full of life and artistic realism. If nothing else were to be seen in the galleries but this group and the two statues entitled *Comedy*, and *Ione*, no admirer of good sculpture should lose the opportunity of seeing them. We are informed that Mr. NELSON MACLEAN was engaged for several years on the various works exhibited at the new galleries in Piccadilly.













*The Arts: The Sculptor.*  
By H. F. Schumann.

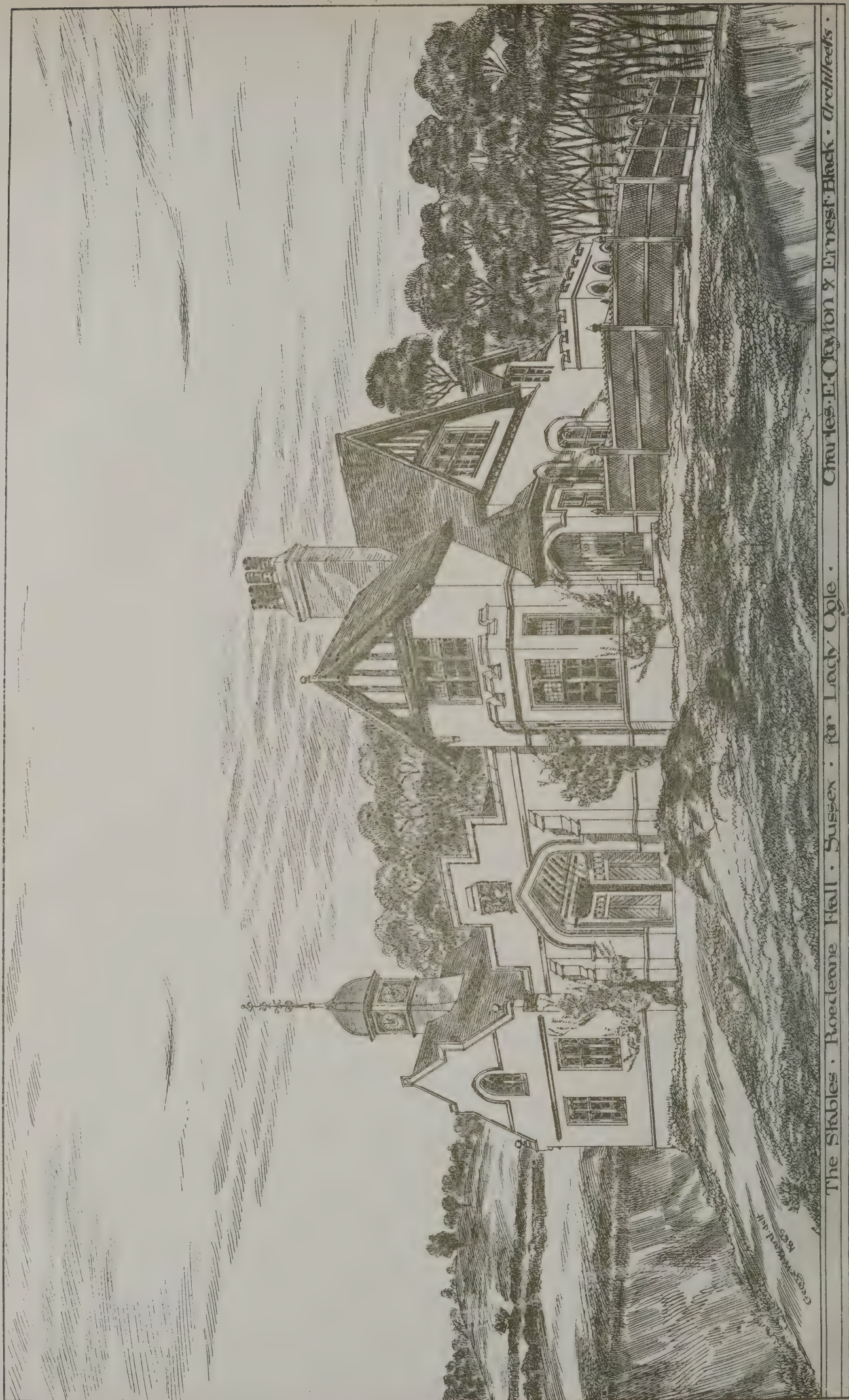












Charles E. Clayton & Ernest Black · Architects ·

The Sables · Roedene Hall · Sussex · for Lady Ogle ·





RESIDENCE OF JASPER GIBSON, ESQ.  
BANISTER FLETCHER, ARCHITECT.

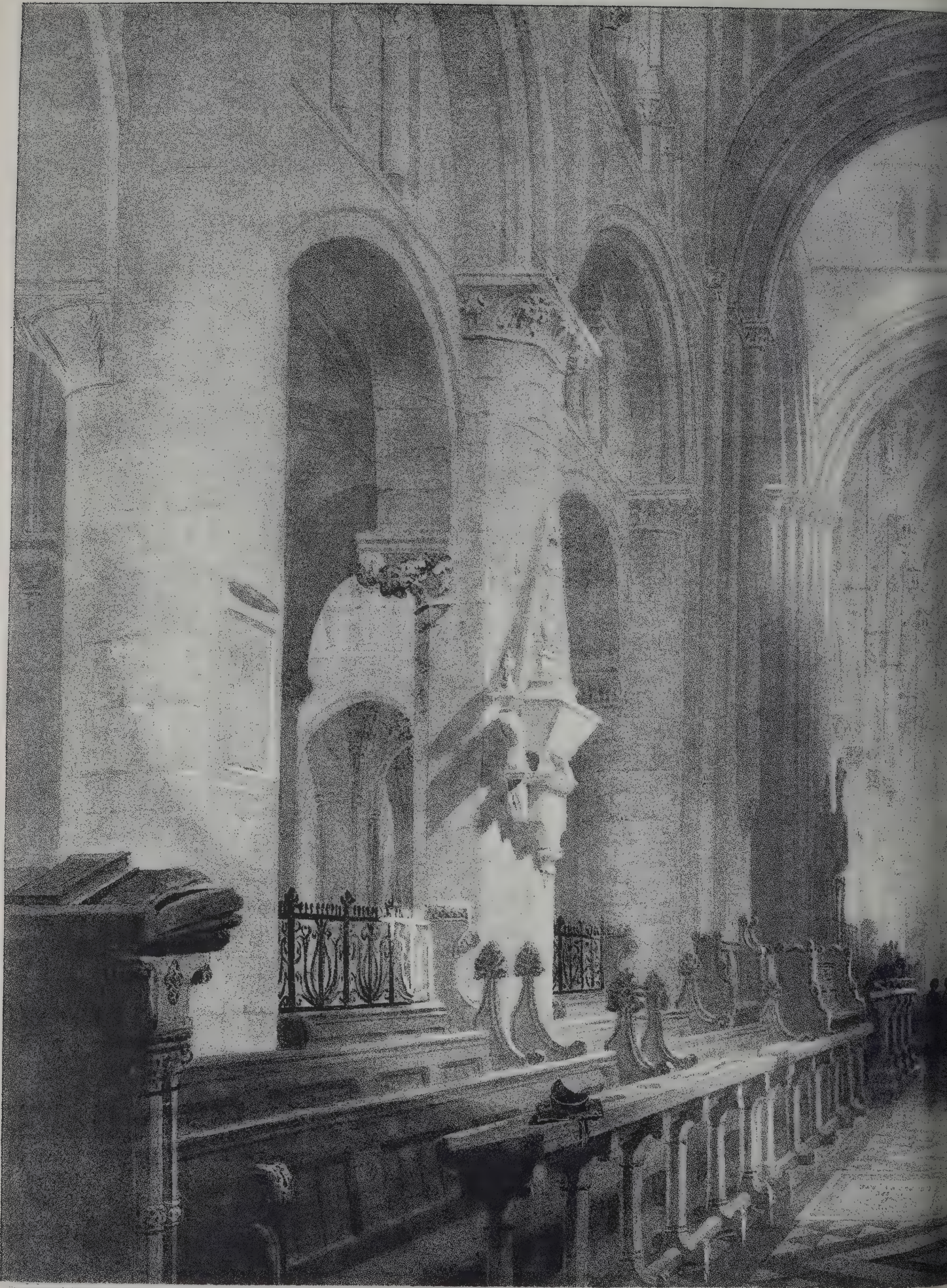










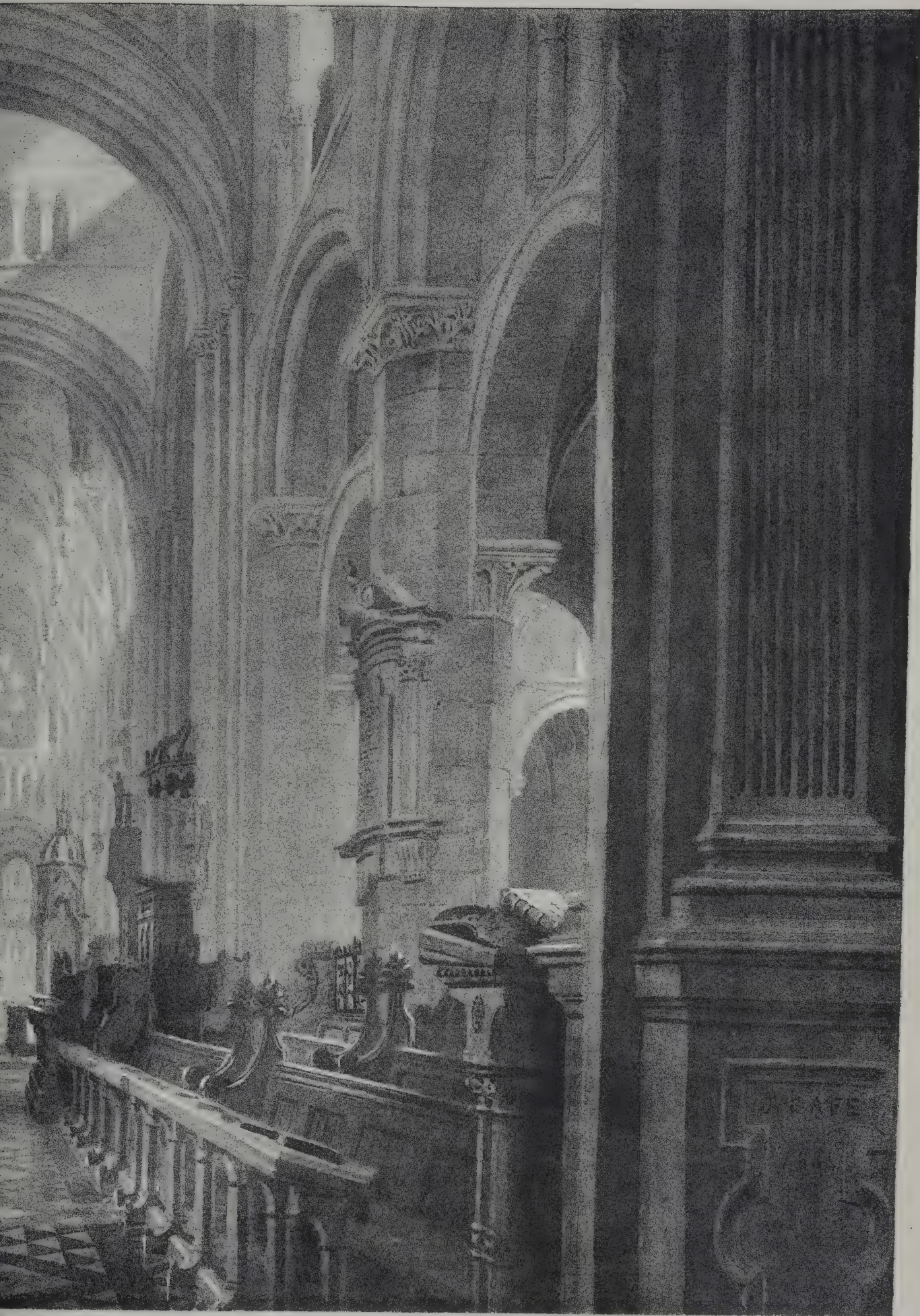


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CHRIST CHURCH

DRAWN BY











## ILLUSTRATIONS.

THE ARTS: THE SCULPTOR.

THIS illustration is the fifth of the series by M. EHLMANN.

## RESIDENCE AT WEST HAMPSTEAD.

WE illustrate this week the residence of Mr. JASPER GIBSON, which has just been completed. It is situated in Cleve Road, West Hampstead, a part of London which is becoming daily more in request. The house comprises on the top floor large billiard-room, with open timbered roof, two floors of ten bedrooms, bath-room, and Mrs. GIBSON's private sitting-room on ground floor, three large reception-rooms, conservatory, and balcony out of morning room for visitors to watch the lawn tennis; kitchen and offices. In the basement are large cellars, larders, and stores. The architect is Mr. BANISTER FLETCHER.

## THE STABLES, ROEDEANE HALL, NEAR BRIGHTON.

THE stables shown in the accompanying illustration have been recently built for Lady OGLE, of Withdeane Court, Sussex, upon an elevated site at the rear of her new house at Patcham. The buildings comprise, in addition to the stabling, double and single coach-houses, the coachman's lodge, and a range of fowl-houses. The architects were Messrs. CHARLES E. CLAYTON and ERNEST BLACK, of Brighton.

## INTERIOR OF CHRIST CHURCH, OXFORD.

## THE ARCHITECTURAL ASSOCIATION.

THE special business adjourned from the meeting of May 28 was resumed on Friday evening the 12th inst., Mr. C. R. Pink, president, in the chair.

Mr. George Ashlin, R.H.A., was elected a member by acclamation.

A vote of thanks was passed to Messrs. Ernest George & Peto in connection with the visit paid to buildings being erected by them at Crawley; also to the Institute of Architects for being allowed the use of their committee-room.

Mr. SOMERS CLARKE, by invitation of the President, made a communication in regard to Westminster Abbey. No work, he remarked, existed that thoroughly illustrated Westminster Abbey. If we wished to find illustrated works of our national buildings, we must go abroad to France and to America. In America they illustrated them because they had no historical works of their own to illustrate. Beyond Neale, Ackerman, and a few works of the sort—and these were histories and not architectural monographs—we had nothing, and the erection of the scaffolding for works of repair at the Abbey suggested that such a work could now be produced. Such an opportunity of measuring the building might not occur again. Later, the same idea had been broached by Mr. Waterhouse in an Academy lecture. The Dean had received the suggestion from him (Mr. Clarke) with favour, and by advice of the Dean he had sent a description of the proposed work to the Clarendon Press, Oxford. The proposed work was a monograph, fully illustrating the artistic and architectural features of Westminster Abbey. Touching the production of the work, if the Association took it up it would be done; if they did not the work would not be done. With the exception of the drawings of Henry VII.'s Chapel nearly all the measured drawings to explain and illustrate the Abbey had to be made. The erection of scaffolding would entail great expense, while the present scaffolding would give access to otherwise inaccessible parts of the interior. The scaffolds were, however, of no use without hands to take measurements, and the suggestion had occurred to him that by the co-operation of the students of the Royal Academy, of the Institute of Architects, of the Architectural Association, and of private students, the necessary measurements could be made at a small cost, many of them for nothing. He had the assurance of Sir Frederick Leighton, Mr. Pearson, and Mr. Norman Shaw that when the scheme is matured they would give their assistance in arranging that the prize drawing of the Academy competition for architectural students should be part of the Abbey agreed on for some of the illustrations. Parts of the Abbey were already measured by the students, and these were ready to hand. All the gentlemen mentioned showed great interest in the scheme, and he was waiting till he got the matter into shape, with the complete consent of Mr. Pearson. But he wished to make sure of his ground before making his second application to Mr. Pearson.

Mr. Ewan Christian, the president of the Institute, had also expressed his approval of the scheme. As to the Association, its life and energy were well known to him, and he felt that the greater number of hands that would assist him in the work would be from the Association. The illustrations of the fabric would be in black and white, but to fully illustrate the royal tombs and other details coloured plates would be required, skilled colourists for which would be wanted, and assistance from South Kensington in this respect was probable. Paid workers would be required for some few measurements which could not be looked on as part of any instructive course for students. The letter-press for the work, containing illustrations 17 by 22, would not be more than was necessary thoroughly to explain the plates, and would be placed in the hands of Mr. J. T. Micklethwaite, and an examination of the fabric rolls would be done by Mr. W. H. St. John Hope. After other details, Mr. Clarke mentioned that the names of the authors of the drawings would appear on the plates, and concluded by saying that in combining to do the work they would do something to remove what was almost a disgrace not to have been done before.

The PRESIDENT thanked Mr. Clarke for bringing before them a matter of not only architectural but national interest.

Mr. GOTCH said he thought the meeting might authorise the committee to send out a circular to every member asking offers from those willing to help in the work.

The PRESIDENT said a petition signed by over fifty members had been sent in, asking that the Saturday afternoon visits might be continued during the summer by excursions to buildings out of London, as the trip to Crawley had proved so successful. The matter had been brought before the committee, and the matter would, he hoped, be arranged.

The discussion of Mr. Cole A. Adams's resolution involving the raising of members' subscription from half a guinea to one guinea was then resumed, the consideration having been adjourned from the previous meeting on the proposition of Mr. Stannus, seconded by Mr. Baggallay.

Mr. STANNUS asked the President to make a personal appeal to Mr. Adams to allow the matter to rest for one year. They were all agreed as to increasing the efficiency of the education, but he considered Mr. Adams's victory would be only less disastrous than defeat. He hoped the resolution would not pass. At the same time, Mr. Adams had laboured so much for their interest that they were in the awkward predicament of appearing to cast a slur upon him in opposing the proposed change.

Mr. BAGGALLAY said the reason alleged against the change was that it would be hard on the poorer students. But he thought that it was the poorer students who would get the most benefit by it. He felt a strong dislike to their becoming pensioners of the Institute. Mr. Sedding might have influence with the Institute, but he doubted whether the Institute would give them the money.

Mr. GOTCH said that as an amendment he would propose to omit from the resolution the matter regarding the publication of papers.

Mr. COLE A. ADAMS said he would withdraw that part of the motion.

Mr. M. B. ADAMS said that owing to this withdrawal he would support the resolution. He had felt they were travelling beyond their province, which was not that of a learned society, to publish proceedings, &c.

Mr. MILLARD hoped members would vote for or against, according to what they thought would promote the present and future good of the Association, and not from personal considerations about their pockets.

Mr. SEDDING said the plea for the rise in the subscription was the advancement of education, but those in favour of it must not claim to have education more at heart than those who were against the change. How could education be advanced if a number of members withdrew in consequence of a raised subscription? It had been stated that, if the poorer students could not afford to pay the small sum, they had better not enter the profession. That was not the doctrine in bygone days. Formerly the poor student was helped, and the dullard was let go to the wall. The proposal was likely, he thought, to irritate everyone all round. He knew that several members would withdraw from the Association, and he thought they should hesitate before passing the resolution.

Mr. E. W. POLEY proposed as an amendment that the question should be deferred for twelve months.

Mr. HAROLD TAYLOR seconded it. He said no definite statement had been made of how the money was to be spent.

Mr. FARROW said it was impossible to say how the money would be disposed of till they knew how much money they would have to spend.

The amendment was put, and lost by a large majority.

Mr. BRODIE proposed that the question should be decided by voting papers sent to all the members.

The PRESIDENT ruled that the amendment was out of order.



Mr. H. KEMP proposed that the subscription of members residing within twenty miles of London should be a guinea.

Mr. SLATER said that would not define properly the difference between town and country members. It turned on the facilities for reaching town rather than distance in miles.

Mr. BLASHILL: This is a most important question. Why should we not vote white or black on it?

The amendment was withdrawn.

Mr. STANNUS then proposed an amendment, which he trusted would be the last—"That the Association approves of the advancement and consolidation of the scheme of education, and authorises the committee to go to an expense not exceeding 100*l.* during the session 1885-86, and postpones, towards the end of the session, the question of raising the subscription till the experience gained will guide the decision. Mr. Stannus then read a letter from Mr. R. Phené Spiers to the effect that that gentleman believed that Mr. Aston Webb, whose views he had heard, and those who held the same views, were wrong in wishing to raise the subscription. He pointed out that a guinea subscription would not make a university of the Association, and that it was unfair to make members who could not attend the lectures pay for those who could attend.

Mr. LOVEGROVE seconded the amendment. He said there would be two classes under the proposed *régime*: those who participated in the advantages, and those who, debarred by distance or for other reasons, could not share in them. Moreover, while he wished to do his best to forward the work of the Association, he did not wish to lose many members who would leave them and start another Association. He regretted the rules would not allow them to decide the question by sending out voting papers.

Mr. J. D. MATHEWS supported the amendment.

Mr. BLASHILL considered the change would prove a departure from the lines that had raised the Association to its present position of efficiency. Its prosperity during the last thirty years had been most marked. That which had raised it to its excellency should not lightly be departed from, namely, the personal work and efforts of the junior members aided by the help of the older members. Students of thirty years ago had grown older, and they seemed to fancy the Association had grown old too, whereas the Association was carrying out as vigorously as ever the same useful work of education of students. They ought not to try and do the work that the Institute of Architects ought to do for them, and which, he believed, would soon be undertaken by the Institute. He ventured to think Mr. Sedding did not quite understand the position of the two societies. They could not accept a heavy subsidy from the Institute without resigning the management of their own affairs. The business of the Association was to get hold, as far as possible, of all students of architecture in the country, and not do anything which would tend to lessen their numbers.

Mr. W. H. ATKIN BERRY opposed the amendment. He said they would not be able to show the results of the new scheme in the time specified.

Other members spoke. One said the idea of printing the transactions was now given up, and so they would get less for their guinea than was at first proposed. Another member regretted that they would lose the Association, which they esteemed so much, and get a university, which they did not ask for. Another member said the vote would never be taken if a limit was not put to the speeches.

Mr. COLE A. ADAMS then replied on the question with an able and persuasive speech.

The President then put the amendment to the meeting, and it was lost by a considerable majority.

The President next put the motion, and, tellers having been appointed, it was, on a count of hands, declared lost. A division then took place, and there were—for the motion, 61; against, 70, the majority against increasing the amount of the subscription being 9.

The proceedings terminated with the announcement.

## THE NATIONAL ART LIBRARY.

THE report of Mr. R. H. Soden Smith, M.A., Keeper of the National Art Library, states that the attendance in the Art Library during the past year amounted to 16,148 students, and 5,951 subscribers, the reading-room being open for 292 days, instead of 311 in the previous year. The average daily attendance remained the same; this result was due to the opening of the new reading-rooms in October, and the consequent increase in the attendance of readers from that time. Thus, the loss during the earlier part of the year, and the period of necessary closing while the books, &c., were being removed, was compensated. During the month of December, the increase of attendance amounted to nearly 400 over the numbers of the same month in 1883.

During the year preparations were gradually made for moving the whole library from the temporary quarters in which

it had been so long confined to the new rooms erected on the south front of the museum. All the books that could be transferred without interfering wholly with the work of the reading-room were gradually moved, and at length, in the middle of September, it was necessary to finally close the old rooms.

Not more than a fortnight had, however, elapsed when, on October 1, readers were admitted to the new reading-rooms. In the meantime the classification and press-marking of the books were pushed on by the library staff, both during the day and in the evening, with all possible diligence; and I have much satisfaction in reporting upon the prompt and efficient manner in which the attendants carried on the work, as well as on the knowledge which they evinced of the contents of the library in supplying the wants of readers before it was possible to have the shelf arrangement and the press-marking completed.

The new reading-rooms consist of a central chamber 64 feet by 58 feet, a room at the east side 85 feet by 53 feet, with accommodation for about eighty readers, and a corresponding room at the west side fitted in similar manner. They are excellently lighted from the top and by windows on the north. At night the lighting is electric, two methods being in use, the large upper lamps giving a general illumination and enabling the titles of the books in the galleries to be distinctly read; the lower, star-shaped burners, about five feet above the tables, supplying the light required by students. In addition to the advantage of abundance of light, by which the smallest print can be read and colours distinguished, the absence of heat is a great gain, and still more perhaps in a library the absence of the products of gas, which prove destructive to leather bindings.

All the rooms have galleries shelved for books, and in these and in the cases below the various classes into which the contents of the library are divided are systematically arranged as far as the space permits.

The centre room is devoted mainly to the collection of prints and photographs, and is provided with presses in which the larger part of the collection is kept; tables are placed here on which books of unusual size, drawings, and prints can be examined. The pier space in the three rooms will serve for the exhibition of framed drawings and prints of ornamental art, and such table space as can be spared will be used to show in cases some of the examples of early printing, book ornament, and bookbinding, which have been gradually collected for some years past.

The original intention was to have placed in the reading-rooms only books of reference and works in immediate demand, and thus keep the book-cases low, as the height in a reading-room ought never to exceed what can be reached without the aid of a ladder or steps; but, owing to the circumstance of the side rooms which were to have stored the books not being yet built, it has been found requisite to shelve the public rooms to a height of nearly 12 feet, and, in order to provide temporarily the requisite space for the collection, to use, in addition, the gallery of the court in which casts from the antique are now placed.

The fittings of the reading-room are of mahogany, which offers some advantages over oak, and the tables are constructed so that the desks for supporting books are convenient for students copying as well as reading. The heating is by hot-water pipes carried under each table as well as by apparatus at the sides of the rooms.

The classification of the books is being carried out as completely as possible, and, it is hoped, will ultimately be such as to enable volumes not only to be found rapidly, but also will serve to aid materially the inquiries of readers as to the literature of any special subject.

The system of bookbinding in various colours, according to classes, which has been pursued for some years, will aid in finding as well as in replacing books, and continues to be carried out.

The number of volumes and pamphlets acquired has been 1,820 purchased, 391 presented.

Perhaps the rarest acquisition is a book of Venetian lace-patterns, containing many designs of great elegance; it was printed at Frankfort-on-the-Main, by Matthes Beckers, 1601.

Of more modern books may be noted the engraved works of Sir Robert Strange—a fine copy presented by him to a relative, and containing exceptionally good impressions of many of the plates.

Daniell's great work, "Antiquities and Views in India," a fully-coloured copy in six volumes, fol., 1799; Liber Naturæ, a reissue of a set of mezzotint plates by S. W. Reynolds, after the works of the early water-colour artist Thomas Girtin; Biardot (E. P.), "Les terres cuites funèbres;" with coloured plates, Paris, 1872.

A valuable series of catalogues of Dutch picture sales in fifteen volumes, ranging from 1771 to 1841, has been acquired to add to the extensive collection of art catalogues gradually brought together during the last few years for purposes of reference.



The collection of Japanese illustrated books has received a very important addition in a series of sixty-six volumes illustrating their skill in wood engraving, and especially in printing in colours. Some of these are fine specimens and old, dating from a period before the present eagerness to supply the European market led to the haste and inferiority of production which, unfortunately, mark much modern Japanese work; the skill evinced in the effects produced in some of these books by colour-printing has not been hitherto equalled in Europe. Another remarkable series of volumes was acquired at the partial dispersion of the Japanese art and educational apparatus in connection with the Health Exhibition. These consist of a large series of volumes, including, among other matter, modern reprints of woodcut illustrations of ancient writing, of ornamental details of objects in metal-work, furniture, costume, grotesque sketches of character, animals, flowers, &c. A work of some importance for the history and illustration of ancient Chinese bronzes has been acquired in twenty volumes, giving illustrations of vases, incense-burners, bells, and other objects, with the signatures of the artists and Chinese text accompanying each woodcut.

The illustrations of early printing and book ornament have received additions, among which may be mentioned a "Book of Hours," published by Kerver of Paris in 1500, with the artistic borders to each page characteristic of such volumes; also "Missale Romanorum," Venice, 1534, bound in stamped morocco, with clasps; and various examples of the work of the early printing-presses in the latter part of the fifteenth century.

A considerable number of specimens of bookbinding, English and foreign, have been added; among them a good many examples of the stamped vellum and pigskin covers which were successfully produced in the sixteenth century, and the excellence of which is at length being appreciated.

Duplicates of works much in use, especially those required for circulation to provincial schools, have been acquired as far as funds would admit. Among these may be mentioned a copy of Piranesi's great work on classical antiquities, the Roman issue, that in use in the library hitherto being the Paris edition; Pfnor's "Architecture, décoration et ameublement de l'époque Louis XVI.;" "Gravelot et Cochin, Iconologie par figures," four vols. 8vo, Paris, with good impressions of the plates; "Œuvre de A. Mantegna reproduit par Amand Durand," fol. Paris, 1878.

The number of original drawings and designs added has been 1,808. Among those presented may be specified nearly 1,000 original sketches, designs, and water-colour drawings by George Cruikshank for some of his most popular etched or engraved productions; these are included in the large collection of his works, the gift of Mrs. George Cruikshank, of which more particular mention is made below. Among the drawings, full of the curious humour and dexterity of the artist, may be named the water-colour originals for the illustrations of the comic almanacks, the sketches for the "Epping Hunt," for "London Characters," "The Comic Alphabet," frontispiece of the "Mornings at Bow Street," originals of the "Sketches by Boz," &c.

Three characteristic drawings by William Blake, presented to the museum by Sir Charles Dilke, Bart., are placed in the library collection. A series of large drawings of Indian Mohammedan architecture has been acquired, including good illustrations, in some examples full-sized, of the inlay work in coloured marbles, agates, &c., of portions of the Taj Mahal near Agra. A volume containing a collection of costumes of British India; native drawings; original designs for silver-smiths' work by French designers of the early part of the present century; some designs for painted glass windows by Willemette and others.

The number of engravings, etchings, and woodcuts added to the collection has been 2,778 presented, 3,791 purchased. Among those presented must be specially mentioned the large gift, which is due to the liberality of Mrs. George Cruikshank, of a series of the works of her late husband, almost unrivalled in its extent and completeness, including as it does proof impressions of the artist's chief productions, with his autograph signature upon each. Thus, complete sets of the "Life of Joseph Grimaldi," "The Omnibus," "The Tower of London," and many others of his most noted works are represented by signed Indian proofs; altogether nearly seventy years of work are illustrated by this remarkable and interesting collection. In addition, Mrs. George Cruikshank has presented duplicates of many engravings and sets of subjects for the purpose of exhibition at Bethnal Green Museum and for circulation to exhibitions in connection with the Department. Additions have been made to the collections of early woodcuts, to the series of Italian chiaro-oscuro prints, and to the works of the "Little Masters" of the German school, Aldegrever, the Behams, and others.

The number of photographs acquired has been 1,458. Among these may be noted continuations of the various series of permanent autotypes published by Braun & Co. Among them the pictures in the gallery of the Hermitage, St. Peters-

burg; the Dresden Gallery; pictures of the Ecole des Beaux-Arts, Paris, &c.; also a series of Italian sculpture and others of Indian architecture; 2,275 diagrams, drawings, prints, and photographs have been lent to provincial and other schools of art for exhibition at institutions in the provinces, or for use in the lecture theatre. The total number at present on loan to the Art Museum for exhibition or circulation, or otherwise in use out of the Art Library, is upwards of 10,500.

The work of publishing "Classed Lists" of the contents of the library has been pressed on as far as possible, but was unavoidably hindered and delayed by the labour of moving the whole collection to its new quarters; nevertheless, a second edition of the "List of Books on Heraldry" has been issued, and is sold at sixpence, and a second and much enlarged edition of "Books on Painting," sold at one shilling. The list of works on pottery and porcelain, which includes more titles than have yet appeared in any bibliography of the subject is in the press; the list of books on furniture and cabinet-making is well advanced; materials are collected and being daily added to for many other classes. Besides the great use of these classed lists to students in the reading-room, they prove of service in arranging the books on the shelves, and aid materially in the rapid finding of works by the attendants. They are in use in the British Museum reading-room, that of the Society of Antiquaries, and elsewhere.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### THE BUILDING ACCOUNTS OF THE GREAT HALL AT HAMPTON COURT.

(Concluded from page 341.)

#### Timber.

PAYD to Robert Wodlonde, of London, carpenter, for 150 of sesnyed playnche burdde, serving for the lenyng plase in the nether ende of the haull, and the lenyng plase before the Kynges chamber dore, at 3s. 2d. the hundred.

Also, to Fraunsys Stykrayd, of London, carpenter, for 2,000 of fine selyng bourddes, at 31s. 13d. the thousand, for the vaught in the Kynges new haull.

Item, for 420 foote of vent and creest for the haull, at 6d. the foote.

Also payd to Willm. Wethersbe, of London, carpenter, for 6 payre of scruse, at 5s. 2d. the payre, serving to rayse the flowre of the haull, with 4d. for lande carriage of the said scruse from Busschys Gate to Barnerdes Castyll; in all 31s. 4d.

Also payd to John Bartlymew, of Marlow, for batlage of the said scruse from London to Hampton Court, 4d.

#### Plumbing.

Payd to Thomas Ostley, stapuller, for 18 fother 12 cwt 3 quarters 21 lb. of leade, to cover the Kynges New Hall, at 4l. 7s. 8d. the fother.

Also payd to Thoms. à Coon, the Kynges sergeunt plumber, for one hundred wait of sowther, of hym bowght and delyveryd at Hampton Court, conteynnyng 512 lb. at 4d. the lb. for sorderyng the pypys abowght the Kynges new hall.

#### Glazing.

In the two over lyghts at the gable endes of the hall, 8 panys new sett, containing 54 fote, at 5d. the fote.

Also the hernessyng of the two great windows at the gabyll endes of the said haull, containing 70 fots, at lyke pryce, 29s. 2d.

Paid to Galyon Hone, the Kynges glasier,—In the two great wyndows at the endes of the haull ys two great armys, with four beestes in them at 6s. 8d. the pece. Also in the said wyndows in the haull is 30 of the Kynges and the Quenys armys, pryce the pece 4s. Also in the wyndows in the said haull ys 46 badges of the Kynges and the Quenys, pryce the pece, 3s. Also in the windowys in the sayd haull ys 77 sryptors with the Kynges worde, pryce the pece, 12d.

Payd to Galyon Hone, the Kynges glasiar, for glasyng in the haull 11 syde wyndows, every wyndow of 8 lyghts, every lyght conteynnyng 11 foot, whyche emownteth in every wyndow, besydes the harnessyng, 88 foot, at 5d. the fote.

In the gabull wyndow at the est end of the haull ys oon armys of the Quenes new sett, 6s. 8d.

#### Tiler's Work.

Payde to John Burdde, of Chesyllhurst, for 6080 of playne tyles, of hym bowghte and delivered at Hampton Court, for to pave the Kynges new hall, at 26s. 8d. the thowsand, by convencion—8l. 11s.



Empcion of tallow candells spent by the workmen in the nyghte tymes uppon the payvng of the hall, for the hasty expedition of the same, at 18*d.* the dosyn.

Also paid to John Church, of Chersey, for payvng-tyl for the haull, of hym bought and delivryd at Hampton Court, at 18*s.* 4*d.* the 1000.

Payd to William Kyng John Hobbs, fremason, for hewing and setting the payvng of the herthe in the Kynges new hall, of Rygate ston, conteynyn 36 fote, at 1*½d.* the fote.

Payd to Robert Burdges, bryklayar, for payvng of the haull, by convencion, 53*s.* 4*d.*

#### *Painting and Gilding.*

Payd to John Hethe, payntour, of London, for the payntyn of 6 great lyons standing abowght the batyllmentt of tymber worke uppon the Kynges new haull, theyre vaynys gylte with fyne golde and in oyle, price the pece, 20*s.*

Also to the same, for gyllyng and payntyn of 4 great dragons, there vanys layde wythe oyle, pryce the pece, 20*s.*, servyn for the said battylment.

Also to the same, for gyllyng and payntyn of 6 greyhounds, three vanys wyth oyle, price the pece, 10*s.*, servyn the said battylment.

Also of 4 lyons, servyn for the femerall, with there vanys layde in oyle, price the pece, 20*s.*

Also of 4 dragons, servyn for the said femerall, with there vanys layde in oyle, price the pece, 20*s.*

Also of 4 greyhounds, wyth their vanys layde in oyle, pryce the pece, 10*s.*

Also of a great lyone, crownyd, baryng a great vane, layde in oyle, servyn the toppe of the femerall, pryce 26*s.* 8*d.*

Payd to Henry Blankston, for gyllyng and payntyn of two vanys, servyn the bests of freston stondyn at the end uppon the haull, oon of the Kynges armys, the other of the Quenys, wrowghte wyth fyne golde and in owyle, price the pece, 4*s.*

The gyllyng and payntyn of bests: also to Henr. Blaynston, of London, paynter, for the gyllyng of 4 lyons holdyn 4 phanes, wyth the Kynges armys gylte uppon both sydes, every lyon gylde, all the uppermost part and the nether part paynted after a lyon colour, and every lyon stondyn uppon a base paynted whyght and grene, at 20*s.*

Also paid to John Hethe, paynter, of London, for bysyn of 236 fote bourde in the femerell of the Kynges new haull, at 2*d.* the fote, 39*s.* 4*d.*

Also to the same, for layng of the joull pecys rownde abowght the haull with grene merbyll in oyle, and for byssyn of a case-ment in the joull pece at the nether ende of the haull, by convencion, 3*l.*

Payd to John Hethe, and Harry Blankstone, for 10 armes of the Quenes, of the largest sorte, standyn abowght the bordder uppon the 'jowle pece, in the Kynges new hall. 18 making the yerde square, that is, half a yerde, and oon badge over pryce for moldyn, payntyn, and gyllyng with fyne golde and bysse, 12*s.* 8*d.*

Payde to the said John Hethe, for gyllyng and payntyn 272 badges of the Kyngs and the Quenys, standyn abowght the voughte, and the caters within the Kynges new haull, at 12*d.* the pece.

For gyllyng and payntyn of 28 hedde, standyn uppon the hammer beamys in the ruff of the said haull, price, the pece, 2*s.*

Also, for laying of townges of the Kynges best and the Quenys, of antyk worke, standing in the spanderell, and the beamys with yellow, concernyn to the same, in oyle, price 2*s.*

Also, paid to Robert Skyngke, for mowldyn of 36 badges, standing in the crest above the evys pece, in the Kynges new haull, in the haull pace, at the nether ende of the haull, and in the casements rownde abowght the haull, at 3*d.* the pece.

Payd for gyltyng and payntyn of the said 36 badges, at 12*s.* the pece.

Payd to Henry Blankston, for 4 of the Kynges wordes in the casement of the haull pase, in the nether ende of the hall, in Gryke letters, with fyne gold gylte, price, the word, 2*s.*

Payd to John Lyam, of London, groser, for cwt. of red-lede, for colaryng the barres of the hall wyndows, 13*s.* 4*d.*

Payd to the same John, for 6 gallons and a pottell of paynters' oyle, at 18*d.* the gallon, servyn the said wyndows, 9*s.* 9*d.*

Payd to William Haydon, of London, for a pound of brystyll, servyn to pensell the hall abowght, 6*d.*

Payd to John Spenser, of Hampton, for a lode of hay, to be burnyd for pensellyng abowght the hall, 9*s.*

Empcion of paynters' stuff, paid to Henry Burd, grocer, of London, for 12 lb. of white leade, at 2*d.* the lb. Item, for 4 lb. of rede lede, at 2*d.* the lb. Item, for 2 lb. of spaltain, at 4*d.* the lb. Item, for a lb. of verdygresse. Item, for a lb. of maskett. Item, for 4 ounces of synaper blake, at 10*d.* the ounce. Item, for 2 lb. of Spernys oker. Item, for a lb. and 3 quarters of byse, at 8*d.* the lb. Item, for half a pound of vermylon. Item, for a swanes quylle and goos quylle, 4*d.*

Item, for a hundred greys tails, 6*d.* Item, for 2 lb. of verdylor, at 16*d.* the lb., 2*s.* 8*d.* Item, for a galon of paynters oyll, 16*d.* Item, for 4 lb. of blake chalke, 4*d.* Item, for a lb. of vernysse, 6*d.* Item, for 6 lb. of Spanysse white, 3*d.* Item, for half lb. of spong, 2*s.* Item, for a lb. of markyn stones, 8*d.* Item, for a quire of paper riall, 6*d.* Item, for a lb. of Fflaunders heyre, 4*d.* Item, for a dozen of grene floyl, 4*d.* Item, for a quart of pyncke, 6*d.* Item, for 4 skeynys of fynne thredd, 2*d.* Item, for a lb. of drye flowre.

Payd to Henry Blankeston, of London, paynter, for payntyn of 193 posts with whyte and grene and in oyle, every poste conteynyn 2½ yerdes, deippe, at 16*d.* the yerde, standyn in the Kynges new garden.

The badges about the bower in the King's withdrawing chamber, gilt with fine gold and bysse, set with other fine colours, 21*s.* the yard.

#### *Rate of Wages.*

Masons.—John Molton, master, 12*d.* the day. Wylliam Reynolds, warden, 5*s.* the weke. Setters, 3*s.* 6*d.* the weke. Loggemens, 3*s.* 4*d.* the weke. Hard hewars, 4*s.* and 3*s.* 4*d.* the weke.

Carpenters.—Master, 12*d.* a day. Warden, 8*d.* a day. "Prentises" from 4*d.* to 8*d.* a day.

Bricklayers.—Master, 12*d.* a day. Warden, 8*d.* a day. Workmen from 4*d.* to 7*d.*

Joyners.—Master, 10*d.* Others, 7*d.* a day.

Paynters.—Master, 12*d.* Workmen, 8*d.* Colour-grinder, 5*d.* a day.

Playsterers.—Masters, 8*d.* a day. Serveters, 5*d.* a day.

Plummers, 7*d.* a day.

Sawyers, 12*d.* a day.

Scaffalder, 6*d.* a day.

Making of hoddys, and helpyn to scaffalde, 6*d.* a day.

Laborers, 4*d.* a day.

#### *Extra Works.*

Paid to Edmund More, of Kyngston, fremason, for makyng, karvyn, and intailyn of the Kynges armes in thre sondry tables of fre ston, with severall boursers of antique worke and certen of the Kynges best, holding up in a shilde the Kynges armes, with the garter, poises, and scripture ingraved, and the crown imperiall wrought after the best facion; wherof oon of the said tables conteynynge 5 fot and oon inche oon way, and 6½ fot an other way, standythe over the great gate comyn into the Base Court, and the second table of like mesure standithe over the inner part of the same gate, and the third table, conteynynge 5 fot oon way, and 3 fot and 5 inches the other way, standithe over the utter part of the gate comyn into the inner court; in all for fornyshyn and setting up of the said thre sondry tables, with severall armes aforesaid, by convencion, 34*l.* 4*s.* 10*d.*

Payde to Edward Arnolde, mason, for hys cost and expenses rydyn in to Northe Hamptonshe, Bedfordshere, and Huntynghon shere, wythe the Kyngs Comysshen to rest and take up freemasons, by the space of 5 dayes, at 8*d.* the day, over and besyd hys dayes wages for hymselfe and hys horsse, 3*s.* 4*d.*

Digging, moulding, setting and burning of bricks delivered at the brick kiln within the King's Park at Hampton Court at 2*s.* 10*d.* the thousand, by convention.

Item, to Antoyne, clockmaker, of Westminster, for 3 new dyalls for the new orchard, at 4*s.* the pece, 12*s.*

Item, paid for a ronnyng glasse for the workmen and other, to keep their oures trewly at all tymes, 8*d.*

New Normandy glasse, at 5*d.* the fote.

## THE RESTORATION OF WESTMINSTER HALL.

THE report of the Select Committee on the restoration of Westminster Hall, with the reports of proceedings of the Committee and minutes of evidence, and many accompanying architectural plans, drawings, and elevations, has been issued in the form of a large folio blue-book of 170 pages. In the report, which is dated April 25, the Committee describe the scope and objects of their inquiry, and the competing plans proposed by Mr. Pearson and Sir Charles Barry. They state that "on the whole, they have arrived at the conclusion that neither architectural considerations for the group of buildings as they now stand, nor utilitarian reasons connected with the wants of Parliament or the public service, require that Sir C. Barry's wings, or either of them, should be erected." Turning to Mr. Pearson's design, they find that he proposes "to construct a double-storeyed gallery under the buttresses, following exactly the lines of the original building, and inserting in it windows which he considers in general harmony with and suited to the general requirements of the building. Finding also extreme difficulty in carrying on the gallery to the north end of the Hall, and terminating it in a satisfactory manner, he proposes



to erect a building at right angles to the Hall, and facing Palace Yard, in character with the work of Richard II., on the foundations of that previously referred to." The Committee describe what has been urged for and against these plans, and they proceed to say that, after careful consideration of the evidence and models, they are of opinion "that Mr. Pearson's original design of a two-storeyed building under the flying buttresses should be carried out," but suggest certain modifications of which Mr. Pearson has submitted plans. "The upper gallery of the building under the buttresses may," they say, "be divided into four large rooms of sufficient height, approached by steps in the corners of the Hall, or from the lower gallery. These rooms will be conveniently situate for conference rooms or deputation rooms for members, or would be equally useful for Royal Commissions. The lower storey may also be divided into rooms or may be left as a gallery where the Norman walls would be open for examination by those interested in archaeology." They also approve of the proposed building at the north end of the Hall, which, apart from the architectural ends aimed at, "can be fully justified on utilitarian grounds, as it will supply an indispensable need of the House in a stand for horses and other purposes, in place of the present shed." The total estimate of the works by Mr. Pearson is 35,000*l.*, and in conclusion the Committee remark that while they do not contend that the architect's design is an exact reproduction or restoration of the west side of the Hall, on the other hand, "they feel assured that it has been prepared with careful regard to all historical evidence, and that the general scope of his design is in harmony with the simple grandeur of this national building."



#### Society of Arts.—Westgarth Competition.

SIR,—I think when a correspondent takes upon himself the responsibility of sending correspondence to the press, he ought not to act so unfairly as to omit a part of it, as has been done in this case by Mr. G. W. Usill, Assoc. Mem. Inst. C.E., by keeping back my reply to his second letter. Perhaps you will kindly oblige me by inserting this letter, a copy of which I send you herewith, in your next issue, as I am afraid, under the circumstances, it will be futile to ask Mr. Usill to do me justice.

Yours faithfully,

June 15, 1885.

H. H. BRIDGMAN.

[COPY.]

42 Poultry, E.C.: June 9, 1885.

Dear Sir,—I beg to acknowledge the receipt of your letter of this date. I have already forwarded a copy of your previous letter to the secretary of the Society of Arts, and, if the Society has any communication to make to me, no doubt I shall hear from them. You say you have no interest in the matter, then why trouble yourself about it? No doubt the two gentlemen referred to are quite capable of taking care of their own interests.—Yours faithfully,

(Signed)

H. H. BRIDGMAN.

G. W. Usill, Esq., Haldon Lodge,  
Southfields, Wandsworth.

#### "A Fortune for a Trifle."

SIR,—Any youth wishing for fame and fortune at one stroke may write to the Corporation of Liverpool for a copy of "instructions for competition for labourers' dwellings as per advertisement." Fifty pounds and twenty-five pounds premium "will be awarded for designs placed first and second. The Corporation reserve the right to withhold either or both of the premiums in the event of the designs not being of sufficient merit. The Corporation do not bind themselves to carry out any of the plans submitted. The Corporation will require the designs (for three blocks of property in Wright, Blenheim, and St. Martin Streets), to be accompanied with a detail description, together with the plans, sections, elevations, specifications, and also an estimate in detail showing the cost of each building or block and probable return thereon (including the land). The gross rental per week must not exceed 1*s.* 3*d.* per room, and the use of all sanitary conveniences."

Now let us see how to go to work:—

|   |              |
|---|--------------|
| One block of buildings, four elevations | = 4 drawings |
| One long and one cross section          | = 2 "        |
| Plan of each floor                      | = 4 "        |
| Sanitary requirements and roof plan     | = 2 "        |

Total . . . 12 "

Number of drawings for one block, or thirty-six drawings for the three blocks.

Say thirty pages of specification, eighty pages of priced

quantities, finished copies and a builder's guarantee estimate, descriptive information and calculations showing gross returns, construction, area value of land per block, and design according to the Corporation by-laws; bill of dilapidations with rents, losses, collection fees, and other items clearly showing the net rental and profit returns.

Then read *The Architect* for May 30, 1885, which says the net return on the Nash Grove dwellings for the poor of Liverpool is 5 per cent. Rentals—one room, 2*s.* 9*d.* per week; two rooms, 4*s.* 3*d.*; three rooms, 5*s.* 3*d.* per week.

Solve this question. Problem:—1st. If the clever engineers and architects engaged by the Corporation of Liverpool (the top joints having over 1,000*l.* per year each) cannot build a single room for a poor man's dwelling for a less rental than 2*s.* 9*d.* per week, to pay 5 per cent. net, can you show them how to build for 1*s.* 3*d.* gross rental per room? 2nd. The youth that can solve this ought to have the next Corporation appointment of 1,000*l.* per year, which will be

"A FORTUNE FOR A TRIFLE."

#### Adisham Church, Kent.

SIR,—I hope you will allow me a small space, not to defend my introduction, or rather I would say my revival, of return-stalls into this church, but to plead for their more common adoption generally, even where they have disappeared. One cannot quarrel with what your correspondent says in speaking of them (page 332). At the same time, one cannot but feel that, quite apart from questions of Mediaevalism or of modern Rome, the return-stall is the most natural and the most expressive arrangement for the leading of congregational worship, from the churchman's point of view. It is no doubt in direct opposition to the tenets of Puritanism. And when the Puritans, at the Savoy Conference, objected to the minister's turning away from people at any part of the service, the bishops replied that it was meet he should turn to the people when speaking to them in addresses or exhortations, but when he was speaking for them, and with them, to God, it was meet he should turn the other way. Until Puritanism appeared this was undoubtedly the practice from the earliest historic times. It is quite possible, as it was customary at Adisham, and probably still is, for the minister to turn towards the people in addressing them, in spite of the return-stalls.

It was, unfortunately, impossible to preserve the old pavement without relaying, but its old declination from the level towards the east was kept as strictly as possible in the chancel as well as nave.

WILLIAM WHITE, F.S.A.

#### CHURCH BUILDING AND RESTORATION.

**Alverstoke.**—The parish church of St. Mary has been reopened after restoration. The work has been carried out by Mr. J. Barton, builder, Ryde, from the designs of Mr. H. Wood-year, architect, of Graffham, Guildford.

**Bournemouth.**—The first portion erected of the new church of St. Stephen has been opened. The architect is Mr. J. L. Pearson, R.A., and the builders are Messrs. E. Abley & Co., of Salisbury. Mr. Athey is clerk of works.

**Stanford.**—The north aisle and porch of St. Deny's Church, in the parish of Stanford in the Vale, Berks, having become very dilapidated, are now being restored under the supervision of Mr. F. H. Barfield, F.S.I., architect and surveyor, of Faringdon, Berks, Messrs. Cadel & Son of that town being the contractors. The new roofs are of oak, timbers and boarding exposed, the aisles being covered with new lead, and the porch with stone slates.

**Birch-in-Rusholme.**—The new church of St. Agnes has been erected from the designs and under the supervision of Mr. Medland Taylor, architect, Manchester. The church will comfortably seat 502 adults. It is built of brick inside and out, the design having been carefully worked out in detail to suit the material. The roofs are covered with Ruabon tiles, with slight patterns of darker tiles. The plan comprises a nave of five bays, the chief entrance porch projecting from the south side of the westernmost bay, and at the west end, centrally placed, is a semi-octagonal baptistery. The church is widened out at its south-eastern part by a double-gabled aisle. On the north-eastern side of the chancel is the site for the organ with the choir vestry behind it, and clergy vestry above that for the choir. The chancel terminates to the east in a semi-hexagonal apse, its westerly bay being pierced north and south by broad arches. The reredos is mainly of cream-coloured stone, with moulded cornice, surmounted by a plain Latin cross. The Lord's Table is raised seven steps above the nave, and the nave floor sloping up about a yard towards the east, a very dignified elevation is obtained without an undue number of steps. A dwarf stone wall bounds the chancel on the west, on the southern portion of which stands the brass Bible lectern,



and on the northern part the pulpit. The font, a bowl of cream-coloured stone with carved cornice, is supported by columns of Devonshire marble with carved caps. There are three lofty baptistery windows. In the centre light is a cross formed in the glazing and surrounded by a narrow line of ruby-coloured glass. There is an inscription in the glazing, and another in a panel below, with terra-cotta mouldings.

**Worcester.**—A new church at Rainbow Hill has been completed and opened. The architect of the building is Mr. Ernest Day, of Worcester. The church consists of nave, 69 feet 6 inches by 25 feet; north and south aisles, 48 feet 4 inches by 9 feet 5 inches; transept, 15 feet 2 inches by 14 feet 5 inches and 11 feet 6 inches respectively; chancel, which is apsidal, 27 feet by 25 feet; vestry and organ chamber, 15 feet 3 inches by 9 feet 5 inches; north and south porches, 6 feet 6 inches by 5 feet, with narthex 12 feet by 6 feet 6 inches at west end having swing doors communicating with porches. Entrances are also provided at the east end of south transept and vestry. The extreme internal length of the church is 108 feet 3 inches by 55 feet 5 inches wide. Extreme heights are as follows:—Chancel, 40 feet; nave, 48 feet; narthex and porch, 15 feet 3 inches; aisles and vestry, 21 feet; transepts, 26 feet. The walls are substantially built with brick varying from about 2 feet to 3 feet in thickness and faced with pressed bricks set in dark mortar finished with a neat cut joint. Bath stone being employed for windows, bell gablet, and outside dressings; also white brick for string and plinth courses. The nave walls are supported on either side with three Early English shafts with chamfered stone arches and moulded labels of grey Bromsgrove stone. On either side the clerestory are six two-light windows, having lancet heads and cusped piercings; over each transept arch is introduced a circular ornamental stone panel. The west end of the church is relieved and lighted by two small single-light windows and a large five-light central window, 21 feet by 12 feet 6 inches, over which is introduced enriched brickwork, a gable ventilator and stone bell gablet springing from moulded stone corbels. The chancel is approached under a handsome stone archway, 20 feet 6 inches wide and 34½ feet high, to apex, which is constructed with moulded grey Bromsgrove stone jambs and arch, the latter having additional moulded stone members springing from moulded and carved caps, with red Round Oak dwarf stone columns on moulded and carved corbels; over this is provided another roof gable ventilator. The chancel has one double-light cusped window and three single-light cusped windows at the eastern end, all having moulded Bromsgrove stone jambs and heads. The walls are relieved by plain and moulded string-courses of Bromsgrove stone and buff brick. The carving and font were executed by Mr. Forsyth. The heating and gas-work was carried out by Messrs. Goodman & Ward. Mr. William Birch has acted as clerk of works. Messrs. Brazier & Weaver, Bromsgrove, were the contractors.

### NEW BUILDINGS.

**Kingstone Bagpuzze.**—New kennels (for fox-hounds) and feeder's cottage have lately been built for the Old Berks Hunt, from plans and under the superintendence of Mr. F. H. Barfield, F.S.I., architect and surveyor, of Faringdon, Berks. The buildings are of brick and slate, and are very complete. The principal floors are laid with "Imperial Stone" paving. The lodging-houses have white glazed brick dados, and are fitted with iron bedsteads. The food is cooked and the water pumped by steam, and special attention has been given to the drainage. A neat iron fencing, with cast-iron coping, is fixed to the yard walls and the grass yard for young hounds. Extensive alterations have also been made to the huntsman's and whip's houses and the stabling near, and the cost of the whole, including boundary walls, new road, &c., has exceeded 2,200*l*.

**London.**—The foundation-stone of the St. James's Temperance Mission Hall, in the Royal Road, Kennington Park, has been laid. The architect, Mr. Banister Fletcher, F.R.I.B.A., presented the silver trowel to Mr. Arthur Pease, M.P. The silver trowel is made from the architect's special design, and has a beautifully chased silver blade with four silver panels, on which is engraved an appropriate quotation from the old dramatist, Beaumont, "Water, nature's ambrosial nectar, welcome!"

**Wardle.**—Two memorial-stones were laid on Saturday last in connection with a Liberal club at Wardle, near Rochdale. The ground floor contains reading-room, committee-room, bar, caretaker's room, lavatory, bath, w.c. On the first floor will be a room, 32 feet 6 inches by 25 feet, which will accommodate two billiard-tables, one smoke and card-room, and a caretaker's bedroom. The walls will be of Yorkshire parpintois, with Halifax dressings. The estimated cost when completed will be about 1,000*l*., but the contract for the building, exclusive of heating, boundary wall, and furnishing is let to Mr. W. R.

Norris for 636*l*.. The works are now being carried out from the designs and under the superintendence of the architect, Mr. Jesse Horsfall, Rochdale and Todmorden.

### GENERAL.

**The City of Paris and "The Architect."**—The authorities of the City of Paris have granted to the proprietors of *The Architect* a special authorisation for reproducing the architectural, pictorial, decorative, and sculptural works of Paris. As these works exemplify the latest developments of French art in architecture, painting, decoration, and sculpture, the importance of the concession will be evident. The plates will be reproduced in the very best style of art illustration.

**The Duke of Hamilton** has bought back for 2,000 guineas *Daniel in the Den of Lions*, by Rubens, for which Mr. Beckett Denison gave 4,900 guineas at the sale of the Hamilton Collection three years ago.

**A Fresco Painting**, supposed to belong to the thirteenth century, and representing the Descent from the Cross, has been found in beginning the work of restoration at St. Peter's Church, Brackley.

**The Plans** of Mr. Alfred Waterhouse, R.A., for restoring Rochdale Town Hall, were considered at the meeting of the Town Council on Monday, and a tender for the work accepted. The total cost of the work is estimated at 14,567*l*., of which 13,600*l*., received from the insurance companies, is in hand.

**Sir Watkin W. Wynn** intends to erect a spacious cottage hospital at Ruabon, in memory of his uncle, the late baronet.

**Plans** for the erection of baths at Goole have been prepared by Messrs. C. E. & C. Tudor.

**Herr Victor Rumpelmayer**, architect, Vienna, died on Monday night in his forty-fifth year. He was the architect of many beautiful palaces. The mansions of the British and German Embassies in Vienna were designed by him. His last work was the design for Prince Alexander of Battenberg's new palace at Sofia.

**Messrs. Haywood Brothers & Eckstein**, of Union Street, Borough, S.E., have supplied the whole of the lights fixed in the new Cobden Hotel, Birmingham (illustrated in *The Architect* last week). The patent semi-prism lenses are very effective in illuminating the large coffee-room in the basement.

**The Preamble** of the Bill for the proposed bascule bridge across the Thames at Tower Hill has been declared proved. The Select Committee have also stated that there should be a regulation that the opening of the bridge should be continuous, whether vessels are passing or not, at or about the time of high water for a specified time, to be fixed by the Thames Conservators, that the land traffic should yield to the water traffic, and that during the construction of the bridge there should be maintained not less than 160 feet fairway.

**The Glasgow Corporation** have instructed the city architect to report as to the practicability of constructing on the ground of the Improvement Trust labourers' dwelling-houses based on rentals not exceeding 1*s*. 3*d*. a room per week; and houses of one, two, or three apartments for artisans, similar to those which had been provided by the Peabody Trustees and others in London and other towns.

**Authority** has been obtained by the Italian Government from the Porte to carry out a series of excavations in Crete. The first work which will be taken in hand will be an attempt to bring to light the walls of the ancient Gortyna.

**A Landowner** has obtained a reduction from the Blean Assessment Committee owing to the encroachments of the sea between Whitstable and Herne Bay, it having been proved that during the last fifty years nine acres of his land had been absorbed by the sea.

**The City Commissioners of Sewers** on Tuesday resolved to contribute 3,500*l*. for the purchase of ground in London Wall, between St. Alphage Church and Philip Lane, to be thrown into the public way. It was also determined to acquire for 2,725*l*. so much of the site of St. Matthew's, Friday Street, as was required to widen the public way there, and to buy for 700*l*. the ground occupied by the portico of St. Paul's School in St. Paul's Churchyard to increase the width of the thoroughfare there.

**A Programme** has been issued by the Sanitary Institute of Great Britain of arrangements for the autumn congress, which will be held at Leicester on September 22 and following days, under the presidency of Professor F. de Chaumont, M.D., F.R.S. The Council invite papers on subjects mentioned in the programme, and will be very glad to receive the personal co-operation and support of all who are interested in the diffusion of sanitary knowledge.

**The Annual Meeting** of the Association of Municipal and Sanitary Engineers and Surveyors will be held in London on Thursday, Friday, and Saturday, the 25th, 26th, and 27th instant.



A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JUNE 20, 1885.

## NOTICE TO OUR READERS.

On and after July 3 THE ARCHITECT will be dated on the day of publication, which has always been Friday, although the Paper has been dated on Saturday. This alteration is made to avoid the inconvenience which arises from many of our contributors sending us Tenders and other important information on Friday morning instead of Thursday. All communications intended for insertion in the current number must reach the Office as early as possible on Thursday afternoon. Literary matter should be addressed to the Editor, advertisements to the Publisher, 175 Strand, London, W.C.

## ADVERTISEMENT SCALE.

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| For Two Lines and under   | £0 2 6 |
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Special arrangement may be made for a series of insertions on application to the Publishers, at the Office, 175 Strand, London, W.C.

## TRADE NOTES.

MESSRS. MORRISON BROS., of Buchanan Street, Glasgow, have just introduced to the public an excellent drawing ink. The ink is thoroughly indelible, of excellent colour, and flows freely from the instrument. We recommend it with confidence.

WE learn that the walnut fittings in the Council-room of the International Inventions Exhibition were provided and fixed by Messrs. W. H. Lascelles & Co., of 121 Bunhill Row.

A NEW carved pulpit of Caen stone has been executed for Norton Canes Church, near Canock, by Messrs. Jones & Willis, of Birmingham and London.

UPWARDS of 10,000 yards of Lincrusta-Walton have been used at the Hôtel Métropole—the bulk of it in the corridors and bedroom dados with pattern No. 61, while pattern 294 has been used as a deep frieze in the Second Salle with good effect. A large quantity of this beautiful decorative material has been used in Spiers & Pond's exhibition dining-room at the Inventions Exhibition, the whole of which is decorated with Lincrusta. The new Arabian dado, No. 151, with border No. 164, and the new Renaissance fitting (294) have been used. These patterns and their treatment have been

very greatly admired. It is also used in the Marquis of Hamilton's room at the Exhibition, and a room in "Old London," with the new panel dado, No. 165, in stained wood effect, and other Lincrusta decorations, has attracted great attention.

MESSRS. DIESPEKER & Co., of 40 Holborn Viaduct, have just laid a marble mosaic in front of the altar of "Our Lady" at the oratory at Brompton. The marbles used are of very fine quality and colour, and together with the excellent workmanship will make this mosaic one of the chief ornaments of the cathedral.

THE handsome marble work at the Hôtel Métropole has been carried out by Messrs. Burke & Co. The work comprises, in entrance hall, dado, having plinth of grand antique; die, of vert maurin, panelled with campan vert; and capping, grand antique. In balustrade, plinth and capping, grand antique; balusters, campan vert. Main columns and pilasters are monoliths of very choice selected grand antique of the Pyrenees. Small pilasters supporting arches, jaune fleuri; string and arches, pavonazzi; caps and bases, gilded; and cornice, Derbyshire alabaster. In the staircase the steps and landings are in vein marble, and the wall decorations as follows:—Plinth, grand antique; die, joinville with styles and rails of vert maurin; capping, grand antique; alabaster above dado; and doorways and window linings, grand antique. The dado in Grand Salle has plinth of grand antique, die of sarrancolin, with styles and rails of vert maurin; capping, grand antique; pedestals of columns are similarly treated; main pilasters supporting archivolts, campan vert; caps and bases, gilded; window linings, pavonazzi. The principal pavements on the ground floor and basement are in marble mosaic.

THE Church of St. Vedast, Foster Lane, will shortly be enriched by the erection of a series of stained-glass windows, now in course of completion in the studios of Messrs. Heaton, Butler & Bayne, Garrick Street, W.C. They are designed in the style of the Renaissance, and great care has been taken that they should thoroughly harmonise with the architectural features of this noble church. On the north side is an arcade of four large windows: these will illustrate the history of the Passion of our Lord. Each window is divided into two compartments: in the upper or chief division are portrayed the events of the sacred history, while below, in smaller panels, are their relative types. The Betrayal is the subject that has been selected for the first window, the subject panel below being Joseph sold by his brethren. In the next window the principal subject is that of our Lord bearing His Cross. The type of this in the lower compartment represents Isaac bearing the wood as he ascends Mount Moriah. This window is the gift of the Saddlers' Company. In the third window the chief subject is the Crucifixion. The type depicted in this instance is the uplifting of the brazen serpent. The last of this series is the subject of St. Peter and St. John at the Sepulchre. Below is the subject of

the dead man raised at the tomb of Elisha. Immediately above the foregoing are four smaller lights, containing emblems of our Saviour's Passion—one in each window—held by angels, the emblems chosen being the Crown of Thorns, the Scapegoat, the Holy Lamb, and the Martyrs' Palms. The effect of the windows will be particularly striking from the richness of the colouring; but due regard has been given to the necessity of a fair proportion of white glass for the admission of light. This has, however, been used so judiciously as to in no way detract from the beauty of effect, but rather to give a breadth and dignity to the general treatment. It is contemplated to fill the window over the font with the subject of the Baptism of Our Lord in the upper or principal panel, and Christ blessing little children in the lower compartment. The windows are being executed under the supervision of Mr. A. W. Blomfield, M.A.

## COMPETITIONS OPEN.

BOURNEMOUTH.—Aug. 19.—Designs are invited for the Construction of Two Marine Piers. Mr. G. R. Andrews, Town Surveyor, Bournemouth.

BRISTOL.—July 20.—Designs are invited for the Erection of Board Schools, Castle Green, for 1,000 children. Mr. Benjamin Wilson, Clerk to the School Board, Guildhall, Bristol.

NORTHFLEET.—June 23.—Plans are invited for the Erection of Schools to accommodate 200 Boys, 150 Girls, and 150 Infants. Mr. Fred. Mitchell, 49 Windmill Street, Gravesend.

LIVERPOOL.—Aug. 1.—Designs are invited for the Erection of Dwellings for the Labouring Classes. Mr. G. J. Atkinson, Town Clerk, Municipal Offices, Liverpool.

## CONTRACTS OPEN.

ABERCARN.—June 20.—For Erection of Shop and Two Dwelling-houses. Mr. David Davies, Architect, Club Chambers, Pontypool.

ACCRINGTON.—For Rebuilding No. 6 Peel Street. Mr. H. Ross, Architect, 5 Birch Street, Accrington.

ARMAGH.—June 27.—For Building Manse and Offices, for the First Presbyterian Congregation. Mr. J. H. Fullerton, Architect, Armagh. Quantities by Mr. E. N. Banks, C.E., Chichester Street, Belfast.

BALLYCULLEN.—June 20.—For Building Dwelling-house. Mr. Charles Burton, Carrow-colman, Eglisli, Dungannon.

BARNSELY.—June 24.—For Building Shop. Messrs. Wade & Turner, Architects, 10 Pitt Street, Barnsley.

BECKENHAM.—June 29.—For Construction of Seventeen Automatic Flushing Tanks and 4,000 feet of Pipe Sewer. Mr. G. B. Carlton, C.E., Surveyor to the Board, Beckenham.

BILBAO.—June 26.—For Building Theatre. Messrs. Yeves & Co., 24 Fenchurch Street, E.C.



**BELFAST.**—July 1.—For Erection of Mission Hall. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

**BIRMINGHAM.**—June 25.—For Laying Single Line of Tramway (three and a half miles). Mr. Till, Borough Surveyor, Council House, Birmingham.

**BLACKBURN.**—June 20.—For 21-inch Flange Jointed Iron Pipes (600 yards). Mr. J. B. M'Callum, Borough Engineer, Municipal Offices, Blackburn.

**BLACKPOOL.**—June 24.—For Building Engine Shed. Plans at the Engineer's Office, Hunt's Bank, Manchester.

**BOGNOR.**—June 20.—For Building Assembly Hall, &c. Mr. Arthur Smith, Architect, Aston House, Bognor.

**BURSLEM.**—June 29.—For Building an Earthenware Manufactory. Mr. A. R. Wood, Architect, Tunstall.

**BURY.**—June 20.—For Building Boys' School and Additions to St. Thomas's Schools. Mr. J. Williams, 3 Wilson Street, Bury.

**CANTERBURY.**—June 22.—For Construction of Cement Concrete Gasholder Tank. Mr. H. E. Jones, C.E., Gasworks, Harford Street, Stepney, E.

**CANTERBURY.**—July 2.—For Building Wesleyan Methodist College. Mr. C. Bell, Architect, 9 New Broad Street, E.C.

**CARDIFF.**—June 25.—For Building Vestry Hall and Parochial Offices. Mr. W. F. Gillett, Architect, 34 Charles Street, Cardiff.

**CARDIFF.**—June 22.—For Partial Restoration of Parish Church, St. John the Baptist. Mr. John Prichard, Diocesan Architect, Llandaff.

**CARDIFF.**—July 1.—For Laying 30 miles of Cast-iron Main Pipes of 29 and 24 inches diameter, together with the Construction and Erection of certain Bridges and Subways over and under Railways, Canals, and Rivers, for the reception of the Pipes, and other Works. Mr. J. A. B. Williams, C.E., Cardiff.

**CARLISLE.**—June 30.—For Supply of Iron-work and Special Castings during Twelve

Months. Mr. J. Hepworth, Engineer, Gasworks, Carlisle.

**CARLISLE.**—June 24.—For Reconstructing and Refixing Nave Seats, St. Cuthbert's Church. Mr. C. J. Ferguson, Architect, 50 English Street, Carlisle.

**CHESTHILL.**—June 22.—For Additions to Farmstead. Mr. John Hamilton, Chesthill, Fortingal.

**CORK.**—June 22.—For Building Cathedral Caretaker's House. Mr. W. H. Hill, Architect, 15 Marlborough Street, Cork.

**CROFTON.**—July 7.—For Construction of Branch Railway (1½ mile in length). Messrs. John Fraser & Sons, C.E., 31 Park Street, Leeds.

**DALTON-IN-FURNESS.**—June 30.—For Building Baptist Chapel. Mr. J. G. Anderson, 2 Fair View, Dalton-in-Furness.

**DARENTH.**—June 28.—For Supplying and Fixing Weighbridge at the Convalescent Small-pox Camp, Gore Farm. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**DENMARK.**—June 23.—For Delivery of Ten Locomotives. N. Holst, Director, Danish State Railways, Aarhus, Denmark.

**DEVONPORT.**—June 22.—For Building Retort House and Coal Store. Mr. Willing, Secretary to the Gas Company, Keyham, Devonport.

**DUBLIN.**—June 30.—For Building Screen Wall round Gasholders and Lime Store. Mr. O. Armstrong, Secretary, Irish Lights Office, Dublin.

**EAST COWES.**—June 22.—For the Supply of 350 feet run 15-inch Cast-iron Socket and Flange Pipe. Mr. H. C. Damant, Clerk, East Cowes, Isle of Wight.

**EAST HOWLE.**—June 30.—For Building Infants' School and Additions to Board Schools. Mr. J. Henry, Architect, 11 North Bailey, Durham.

**EDINBURGH.**—June 20.—For Providing, Laying, &c., Fireclay Pipes for the Water Trustees. Messrs. Leslie & Reid, C.E., 72A George Street, Edinburgh.

**FALMOUTH.**—June 30.—For Building Sunday-school. Mr. Henry Riley, Architect, Burton-on-Trent.

**GALWAY.**—July 8.—For Building Constabulary Barrack. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.

**GLOUCESTER.**—June 22.—For Building Board School to accommodate 684 Children. Messrs. Medland & Son, Architects, 15 Clarence Street, Gloucester.

**HALIFAX.**—June 20.—For Alterations and Additions to Business Premises at Bull Green. Messrs. Horsfall & Williams, Architects, Post Office Buildings, Halifax.

**HALIFAX.**—June 24.—For Building Coachman's House, Stable, Harness, Coach-house, &c. Mr. James Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

**HALIFAX.**—June 26.—For Building Warehouse. Mr. W. H. D. Horsfall, Architect, Albany Chambers, Commercial Street, Halifax.

**HALIFAX.**—July 2.—For Building Extensive Shop and Business Premises. Messrs. G. Buckley & Son, Architects, Halifax.

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**HANLEY.**—June 22.—For Building Additional Workshops at Marlborough Works. Mr. A. R. Wood, Architect, Tunstall.

**HENSHAW.**—June 22.—For Building Primitive Methodist Chapel. Mr. Joseph Shields, Architect, Blakett's Buildings, Sunderland.

**HOMERTON.**—June 23.—For Building Shelter Roof at the Eastern Ambulance Station, Brooksby Walk. Messrs. A. & E. Harston, Architects, 15 Leadenhall Street, E.C.

**HUNWICK.**—June 24.—For Restoration of Church. Mr. J. P. Pritchett, Architect, 24 High Row, Darlington.

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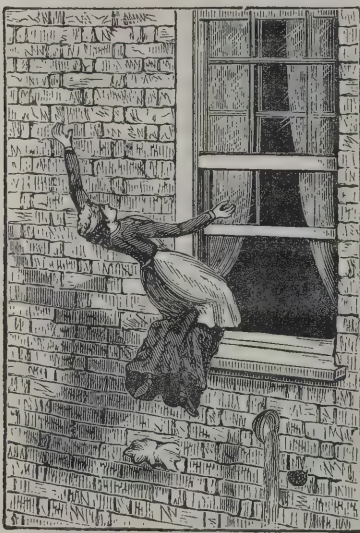
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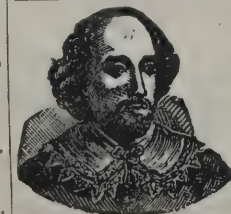
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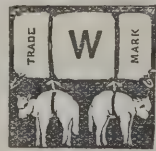
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Exhibition, 1881.

Colourless—Non-Poisonous—Gives no Stain.

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# GRUNDY'S PATENT WARM-AIR VENTILATING FIRE GRATE.

The novelty, superiority, and advantage of this patent  
consist in the heating surface being greater than any  
other Fire-grate introduced to the public. It is very  
simple in construction, and is made in the form of a Stove,  
the back of which is semicircular in shape, with gills  
behind and smoke-nozzle on top, all cast in one piece.  
The same can be attached to any design of a Register or  
Stove front. It is very suitable for schools, class-rooms,  
waiting-rooms, hospitals, offices, dormitories, and dwelling-  
houses, from the cottage to the mansion. Design and  
specification post free on application.

## TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W."

"June 10, 1884.

"Sir,—I have much pleasure in testifying to the  
efficiency of your patent Warm-Air Fire Grate. It has  
been very successful, and given every satisfaction where I  
have used it. Yours, &c."

"To Mr. Grundy. JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard  
Webb, Pastor, 10 Grafton Square."

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the  
excellency and efficiency of your patent Fire-Grate. It is  
the most charming invention for heating a large room I  
have ever known. I shall have pleasure in showing it to  
anyone who wish to have their schools or rooms pleasantly  
and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,  
July 1884.

"DEAR SIR,—I have very great pleasure in stating that  
the first stove, or patent warm-air ventilating fire grate,  
adopted by me in school at Seaton, and a second in a  
Cocoa Palace, have given such satisfaction that I now  
order eleven to be inserted in New Upper Grade Schools in  
course of erection at West Hartlepool. They are the most  
economical, efficient, and easily managed stove at present  
before the public."

"Mr. John Grundy."  
From Hon. and Rev. G. G. C. Talbot, M.A., Withington  
Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school  
is completely warmed by your new grate. It is the most  
economical and efficient that I have ever seen."

"Mr. John Grundy."  
From F. J. Yates, Esq., Architect, Birmingham.  
"The best of the kind I have seen. I shall have pleasure  
in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City  
Road, London.

Works—TYLDESLEY, near MANCHESTER.



**BRIGHTON.**

For Additions to Arlington House, Eastern Road, for Mr. R. Burman. Mr. M. E. MACARTNEY, B.A., Architect, 14 Hart Street, Bloomsbury, W.C. Quantities by Messrs. Evans & Deacon, 1 Adelaide Street, Charing Cross.  
Foster & Dicksee . . . £950 0 0  
Maides & Harper . . . 897 0 0  
Deacon & Co. . . . 835 0 0

**CARDIFF.**

For Building Alterations to Coachhouse and Stables at The Lindens, Penarth, for Mr. Th. Morel. Mr. S. W. RICHARDS, Architect, Herbert Chambers.  
Shepton & Son, Cardiff . . . £1,430 0 0  
Price, Cardiff . . . 1,350 0 0  
Jones Bros., Cardiff . . . 1,339 0 0  
D. Davies, Cardiff . . . 1,295 0 0  
D. J. Davies, Cardiff . . . 1,250 0 0  
Tape, Penarth . . . 1,235 0 0  
BEAVAN, Penarth (accepted) . . . 1,177 0 0

For Draining Ten Houses, Cathays, Cardiff. Mr. E. H. BRUTON, Architect.

Pearson, Cardiff . . . £97 0 0  
Love, Cadoxton . . . 87 19 9  
Adamson, Newport . . . 87 3 3  
Gray, Cathays . . . 83 0 0  
Davies, Cathays . . . 75 0 0  
Franklin, Cathays . . . 75 0 0  
Gibbs, Cathays . . . 64 12 8

**CHESTERFIELD.**

For Alterations and Additions to the Male and Female Imbecile Wards at the Workhouse, Chesterfield. Messrs. ROLLINSON & SON, Architects, Chesterfield.  
Wright, Chesterfield . . . £445 0 0  
Glossop, Chesterfield . . . 445 0 0  
Margerson, Barlow . . . 398 0 0  
TINKLER, Clay Cross (accepted) . . . 394 12 0

**CHURCH GRESLEY.**

For Seating new Portion of Board Schools, Church Gresley.  
Hammer & Co., London . . . £88 4 0  
Redmayne & Co., Sheffield . . . 72 19 0  
FISH, Hartshorne (accepted) . . . 68 4 0

**CIRENCESTER.**

For Building Female Infirmary, Laundry, and Washhouses, and Additions to existing Buildings, Union Workhouse, Cirencester.  
Jones & Co. . . . £2,490 0 0  
Newcombe . . . 1,805 10 0  
SAUNDERS & SONS (accepted) . . . 1,711 10 0

**COLNE (LANCS.).**

For Construction of a Brick Barrel Sewer, 3 feet 6 inches diameter; Building Piers alongside the River Calder or Colne Water, to carry a Wrought-iron Trough; Raising Occupation Road, &c.; and the Laying of Iron and Earthenware Pipes, 27 inches diameter; the total length of the Main Sewer being about 960 yards, for the Colne and Marsden Local Board. Mr. H. BANCROFT, C.E., 83 Mosley Street, Manchester.

Lomax . . . £10,786 8 7  
Fawkes Bros. . . . 7,572 8 0  
Dale . . . 7,232 11 3  
Anwell . . . 6,891 19 7  
Willan . . . 6,646 1 7  
Dawson . . . 6,623 5 5  
Ashworth . . . 6,378 14 11  
Sharples . . . 6,220 18 3  
Hinchcliffe & Small . . . 6,201 14 4  
Turner & Son . . . 6,199 19 3  
Smith . . . 5,966 3 5  
Clegg . . . 5,678 15 6  
Hawley . . . 5,564 7 1  
Rushworth Bros. . . . 5,557 16 3  
McKNIGHT (accepted) . . . 5,514 10 6

**CROYDON.**

For External Painting, Repairs, &c., for Mr. W. A. Stone, Croydon. Messrs. ARUNDELL & TARTE, Architects, 30 Great James Street, London, and 2 Free School Lane, Cambridge.  
Johnson & Manners, London . . . £79 0 0  
Harmer, Croydon . . . 67 17 0

For Internal Repairs, &c., to Fallowfield, Croydon. Messrs. ARUNDELL & TARTE, Architects, 30 Great James Street, London, W.C., and 2 Free School Lane, Cambridge.  
Winburn . . . £32 10 0  
HARMER (accepted) . . . 30 0 0

**DALBEATTIE.**

For Construction of Girder Viaduct over the Urr, near Dalbeattie, for the Glasgow and South-Western Railway.  
McKINNEL, Dumfries (accepted) . . . £15,000 0 0

**DERBY.**

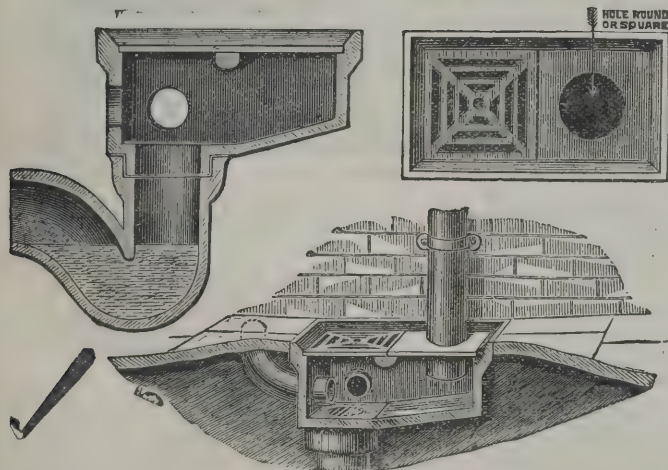
For Building Nineteen Cottages, Derby. Mr. LAWRENCE BRIGHT, Architect, 9 St. Peter's Church Walk, Nottingham.

Slight . . . £4,071 0 0  
Mathews & Chambers . . . 3,980 0 0  
Hingley . . . 3,950 0 0  
Brown . . . 3,630 0 0  
Dickinson . . . 3,592 0 0  
Barker . . . 3,363 0 0  
Durrant . . . 3,330 0 0  
Evans & Woodcock . . . 3,177 0 0  
Watson & Lovett . . . 3,168 0 0  
Ashling . . . 3,100 0 0  
Goode . . . 3,025 0 0  
Moore Bros. . . . 3,000 0 0  
Jay . . . 2,960 0 0  
Hodges . . . 2,950 0 0  
Huckerby . . . 2,902 0 0  
Faulks . . . 2,890 0 0  
Morley . . . 2,878 0 0  
Warren . . . 2,773 0 0  
SMITH & WESTON (accepted) . . . 2,722 0 0  
Fullalove . . . 2,700 0 0

**HERNE BAY.**

For Repairs and Outside and Inside Painting of School, Herne Bay, for Managers of South Metropolitan School District.

Brown . . . £380 0 0  
Oliver . . . 538 0 0  
Sayer . . . 490 0 0  
Beard . . . 400 0 0  
Willmott . . . 390 0 0  
C. Hill . . . 358 0 0  
H. Hill . . . 382 0 0  
Ingleton . . . 346 0 0  
Hills . . . 342 0 0  
Docksee . . . 330 0 0  
Morgan & Sons . . . 233 0 0

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This Gully possesses the following advantages:—

Receives and disconnects one Rain-water Pipe and Three Waste Pipes.

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Forms Drain for Area or Surface.

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The Holes for Rain-water Pipes are made both Circular and Square and of various sizes.

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**VOLUME XXXII. OF THE ARCHITECT.**

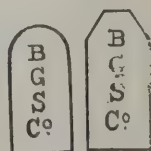
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## EDINBURGH.

|  |      |       |
|--|------|-------|
| For Construction of Wrought-iron Girder Bridge (102 feet span), Edinburgh. |      |       |
| Hanna, Donald & Wilson, Paisley  | £220 | 0 0   |
| Laidlaw & Sons, Glasgow  | 219  | 0 0   |
| Arrol Bros., Glasgow   | 205  | 3 2   |
| Wilson & Co., Greenock   | 188  | 10 5  |
| Peddle & Co., Edinburgh  | 183  | 10 10 |
| Robertson & Co., Workington  | 181  | 9 5   |
| DOUGLAS & GRANT, Kirkcaldy (accepted)                                      | 158  | 14 6  |

## HATTON.

For Building School and Teachers' Residence at Hatton, and a School at Beausale, with Outbuildings, Fencing, &c.

*School and Residence.*

|                              |        |     |
|------------------------------|--------|-----|
| Cashmore, Warwick            | £2,200 | 0 0 |
| Smith, Birmingham            | 2,115  | 0 0 |
| Smith, Melverton             | 2,086  | 0 0 |
| Smallwood, Wootton Wawen     | 1,990  | 0 0 |
| Horsley Bros., Birmingham    | 1,978  | 0 0 |
| MILLS, Leamington (accepted) | 1,937  | 0 0 |

*Beausale School, &c.*

|                              |       |     |
|------------------------------|-------|-----|
| Smith, Birmingham            | 1,285 | 0 0 |
| Smallwood, Wootton Wawen     | 1,250 | 0 0 |
| Smith, Melverton             | 1,231 | 0 0 |
| Horsley Bros., Birmingham    | 1,195 | 0 0 |
| MILLS, Leamington (accepted) | 1,190 | 0 0 |

## HUDDERSFIELD.

For Building Two Dwelling-houses, Lockwood Road, Huddersfield. Mr. J. BERRY, Architect, 9 Queen Street, Huddersfield. Quantities by the Architect.

Raynor & Son, Lockwood, excavator and mason.

Maffin & Brook, Huddersfield, carpenter and joiner.

Haigh, Aspley, plumber and glazier.

Broadbent, Moldgreen, plasterer.

Joughin, Lockwood, painter.

Pickles Bros., Huddersfield, slater.

Total amount of Estimates, £510.

## JARROW.

|  |      |      |
|--|------|------|
| For Street Improvement Works, Jarrow. Mr. J. PETREE, Borough Surveyor. |      |      |
| Lister   | £615 | 16 0 |
| Maugher  | 293  | 0 0  |
| Adams  | 270  | 0 0  |
| CALLAGHAN (accepted)   | 259  | 14 8 |

## KANTURK.

|   |      |     |
|---|------|-----|
| For Building Doctor's Residence, &c., and Dispensary at Boherboy, Kanturk Union; and Sinking Well and Erection of Pump. |      |     |
| Hurley, Formoy  | £695 | 0 0 |
| Lemhan, Boherboy  | 600  | 0 0 |
| Reidy, Cork   | 590  | 0 0 |
| THORNTON, Kanturk (accepted)  | 588  | 0 0 |

## LEEDS.

For Building Five Through Houses, York Road, Leeds. Messrs. W. RICHARDSON & SON, Architects, 13 Park Square, Leeds.

*Accepted Tenders.*

|  |      |      |
|--|------|------|
| Holdsworth & Shepherd, brick-layer and mason | £539 | 3 0  |
| Eastwood, joiner                             | 259  | 0 0  |
| Holdsworth, plasterer                        | 55   | 10 5 |
| Season, slater                               | 44   | 8 0  |
| Fox, plumber and glazier                     | 40   | 0 0  |
| Beaumont, painter                            | 23   | 0 0  |

All of Leeds.

## LONDON.

For Erection of Business Premises and Stabling at 23 Bermondsey New Road, for Mr. J. E. Armfield. Mr. CHAS. J. SMITHEM, Architect.

|                 |        |     |
|-----------------|--------|-----|
| Spencer & Co.   | £1,760 | 0 0 |
| W. & F. Croaker | 1,620  | 0 0 |
| Battle          | 1,567  | 0 0 |
| Shepherd        | 1,195  | 0 0 |

For Erecting a Billiard Room and other Additions at 10 Lyndhurst Road, Hampstead. Mr. ALFRED BURR, Architect, 10 Queen's Square, W.C.

|             |      |     |
|-------------|------|-----|
| Richardson  | £398 | 0 0 |
| Wells & Son | 376  | 0 0 |
| Bridgman    | 368  | 0 0 |
| White       | 360  | 0 0 |

## LONDON—continued.

For Proposed New Buildings for the College of Preceptors, on the Site of Nos. 2 and 3 Bloomsbury Square, and 23 Southampton Street, Holborn, W.C. Mr. F. PINCHES, Architect. Quantities supplied by Mr. H. P. Foster.

|                       |         |     |
|-----------------------|---------|-----|
| Lovatt                | £12,118 | 0 0 |
| Chappell              | 11,684  | 0 0 |
| Foster & Dicksee      | 11,399  | 0 0 |
| Bywaters              | 11,274  | 0 0 |
| Macey                 | 11,153  | 0 0 |
| Nightingale           | 10,976  | 0 0 |
| Kirk & Randall        | 10,920  | 0 0 |
| Wall                  | 10,785  | 0 0 |
| Patman & Fotheringham | 10,563  | 0 0 |
| Colls                 | 10,560  | 0 0 |
| Mowlem                | 10,480  | 0 0 |

For Alterations to Premises, Burlington Buildings, Heddon Street, Regent Street, W., for Mr. Edward Easton.

|          |        |     |
|----------|--------|-----|
| Titmas   | £5,470 | 0 0 |
| Hunt     | 5,369  | 0 0 |
| Conder   | 5,246  | 0 0 |
| Grover   | 5,187  | 0 0 |
| Stimpson | 4,765  | 0 0 |
| Gentry   | 4,530  | 0 0 |

For Additions to Varnish Works, Carpenter's Road, Stratford, for Mr. C. W. Schmidt. Messrs. J. E. GOODCHILD & SONS, Surveyors.

|             |        |     |
|-------------|--------|-----|
| Chessum     | £1,287 | 0 0 |
| Reid        | 1,198  | 0 0 |
| Shurmur     | 1,197  | 0 0 |
| Woodward    | 1,195  | 0 0 |
| Gregar      | 1,187  | 0 0 |
| Pritchard   | 1,180  | 0 0 |
| Conder      | 1,150  | 0 0 |
| Grover      | 1,116  | 0 0 |
| Smith & Son | 1,079  | 0 0 |

For Repairs, &c., to No. 3 Seamore Place, for Mr. W. P. Creyke. Messrs. ARUNDELL & TARTE, Architects, 30 Great James Street, Bedford Row, London, W.C., and 2 Free School Lane, Cambridge.

JOHNSON & MANNERS (accepted).

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SHOP AND OFFICE FITTERS, EXHIBITION STANDS, AND CABINET WORK.



## LONDON—continued.

For Alterations to the Buildings of the St. James's Hall Company. Mr. W. EMDEN, Architect, 28 Southampton Street, Strand. Quantities by Messrs. Evans & Deacon, 1 Adelaide Street, Charing Cross.

## Contract No. 1.

|                              |        |   |   |
|------------------------------|--------|---|---|
| Nightingale . . . . .        | £2,450 | 0 | 0 |
| McLachlan . . . . .          | 2,210  | 0 | 0 |
| Dickenson . . . . .          | 1,998  | 0 | 0 |
| Bywater . . . . .            | 1,938  | 0 | 0 |
| Kirk & Randall . . . . .     | 1,775  | 0 | 0 |
| H. & E. Lea . . . . .        | 1,757  | 0 | 0 |
| SWANSON (accepted) . . . . . | 1,598  | 7 | 2 |

For Erection of Board Room and Offices, Dispensary and Relief Offices, in the Clerkenwell Road, London, W.C., for the Guardians of the Poor of the Holborn Union. Messrs. H. SAXON SNELL & SON, Architects, 22 Southampton Buildings, London.

|                          |         |   |   |
|--------------------------|---------|---|---|
| Perry & Co. . . . .      | £18,929 | 0 | 0 |
| Kirk & Randall . . . . . | 18,320  | 0 | 0 |
| Mowlem & Co. . . . .     | 18,300  | 0 | 0 |
| Adcock . . . . .         | 18,180  | 0 | 0 |
| Nightingale . . . . .    | 17,947  | 0 | 0 |
| Wall Bros. . . . .       | 17,899  | 0 | 0 |
| Gentry . . . . .         | 16,490  | 0 | 0 |

For Works to the Church of St. Stephen, Walbrook. Mr. ALEXANDER PEEBLES, F.R.I.B.A., Architect. Quantities by Mr. W. E. Stoner.

|                            |        |   |   |
|----------------------------|--------|---|---|
| Holland & Hannen . . . . . | £2,741 | 0 | 0 |
| Ashby & Horner . . . . .   | 2,600  | 0 | 0 |
| Brass & Son . . . . .      | 2,551  | 0 | 0 |
| Colls & Son . . . . .      | 2,474  | 0 | 0 |
| Ramsey . . . . .           | 2,462  | 0 | 0 |
| Downs . . . . .            | 2,398  | 0 | 0 |

Exclusive of Stained Glass work amounting to about £1,000.

For Construction of Disinfecting Station at Wharf No. 2, Chelsea. Mr. G. R. STRACHAN, Surveyor, Vestry Hall.

|                                  |      |   |   |
|----------------------------------|------|---|---|
| Cooke & Co. . . . .              | £632 | 0 | 0 |
| BRAID & Co. (accepted) . . . . . | 510  | 0 | 0 |

## LONDON—continued.

For Whitewashing, Distemping, Cleaning, &c., at the St. Olave's Union Infirmary, Rotherhithe, for the Guardians of the Poor of the St. Olave's Union. Messrs. H. SAXON SNELL & SON, Architects, 22 Southampton Buildings, London.

|                             |      |   |   |
|-----------------------------|------|---|---|
| Bamford . . . . .           | £555 | 0 | 0 |
| Vigor & Co. . . . .         | 411  | 0 | 0 |
| Sheerman & Sons . . . . .   | 338  | 2 | 0 |
| Dicksee & Dicksee . . . . . | 308  | 0 | 0 |
| Lilly . . . . .             | 234  | 0 | 0 |

## NOTTINGHAM.

For Sewerage Works in Church Street, Park Street, Tyne Street, &c., &c., for the Works and Ways Committee. Mr. A. BROWN, Borough Engineer.

|  |        |    |   |
|--|--------|----|---|
| Bradley, Lincoln . . . . .             | £1,135 | 13 | 6 |
| Knight, Loughborough . . . . .         | 979    | 6  | 9 |
| Themess, Nottingham . . . . .          | 887    | 0  | 0 |
| Cordon, Nottingham . . . . .           | 816    | 18 | 8 |
| SMART, Nottingham (accepted) . . . . . | 792    | 19 | 1 |

## OLD SWINFORD.

For Decoration and Painting at Old Swinford Church.

|                                |      |    |   |
|--------------------------------|------|----|---|
| Wythes & Son, Dudley . . . . . | £279 | 10 | 0 |
| Ventilation, &c. . . . .       |      |    |   |
| Hill, Old Swinford . . . . .   | 137  | 8  | 0 |

## PERTH.

For about 2,500 superficial yards Dressed Causeway and Kerbing, High Street and County Place, Perth.

|  |        |    |    |
|--|--------|----|----|
| Finlay, Kinross . . . . .                  | £1,396 | 0  | 2  |
| Will, Dundee . . . . .                     | 1,195  | 16 | 10 |
| Black, Pitroddie, Errol . . . . .          | 1,135  | 18 | 8  |
| L. & W. McDonald, Inver-keithing . . . . . | 1,135  | 9  | 0  |
| D. & R. Taylor, Perth . . . . .            | 1,134  | 5  | 7  |
| Sinclair, Perth . . . . .                  | 1,125  | 10 | 7  |
| Shaw, Edinburgh . . . . .                  | 1,121  | 0  | 2  |
| Bowden, Edinburgh . . . . .                | 1,113  | 5  | 3  |
| W. & G. Stratton, Edinburgh . . . . .      | 1,110  | 8  | 5  |
| G. & R. Cousin, Alloa . . . . .            | 1,099  | 16 | 0  |
| A. & J. FAIR, Glasgow (accepted) . . . . . | 1,084  | 12 |    |

## PORTSMOUTH.

For Erection of Wooden Building for Church Congress, Portsmouth. Mr. GEORGE RAKE, Honorary Architect, Portsea. Quantities by Mr. A. H. BONE, Hanover Street, Portsea.

|  |        |   |   |
|--|--------|---|---|
| Smith, London . . . . .                      | £2,825 | 0 | 0 |
| J. & T. R. Pettit, London . . . . .          | 2,800  | 0 | 0 |
| Crook, Northam . . . . .                     | 2,450  | 0 | 0 |
| Ward, Southsea . . . . .                     | 2,329  | 0 | 0 |
| Hall, Portsmouth . . . . .                   | 2,250  | 0 | 0 |
| Cooper, Portsmouth . . . . .                 | 2,216  | 0 | 0 |
| W. R. & C. Light, Portsmouth . . . . .       | 2,151  | 0 | 0 |
| Bull, Sons & Co., Southampton . . . . .      | 2,099  | 0 | 0 |
| Roberts, South Norwood . . . . .             | 2,000  | 0 | 0 |
| Simonds, Reading . . . . .                   | 1,975  | 0 | 0 |
| Kingerlee, Oxford . . . . .                  | 1,695  | 0 | 0 |
| H. & W. EVANS, Southsea (accepted) . . . . . | 1,545  | 0 | 0 |

## RATHEN (ABERDEEN).

For the Mason, Carpenter, and Slaterworks of Additions to Steading of Lochlip, of Cairnbulg, Rathen. Messrs. WALKER & BEATTIE, Architects, 3 Golden Square, Aberdeen.

## Accepted Tenders.

Sinn, Loumay, mason.

Edwards & Rae, Dyce, carpenter.

Morrison, Fraserburgh, slater and plumber.

Wiseman, Fraserburgh, plasterer.

Total—£323.

## RHYL.

For St. John's Church, Rhyll. Mr. DAVID WALKER, Architect, Liverpool. Quantities by Mr. W. M. Boden, Chester.

## TORKINGTON (accepted).

Twelve Tenders received.

## RICHMOND.

For Improvement Works, Quadrant Road, Richmond, Surrey. Mr. WALTER BROOK, Surveyor.

|   |      |    |   |
|---|------|----|---|
| Allred, Chiswick . . . . .              | £531 | 0  | 0 |
| Bloomfield, Tottenham . . . . .         | 490  | 17 | 7 |
| Nowell & Robson, Kensington . . . . .   | 473  | 0  | 0 |
| Mowlem & Co., Westminster . . . . .     | 457  | 1  | 3 |
| MARSHALL, Brighton (accepted) . . . . . | 445  | 0  | 0 |
| Sims, Richmond (withdrawn) . . . . .    | 416  | 0  | 0 |
| Surveyor's estimate . . . . .           | 494  | 10 | 0 |

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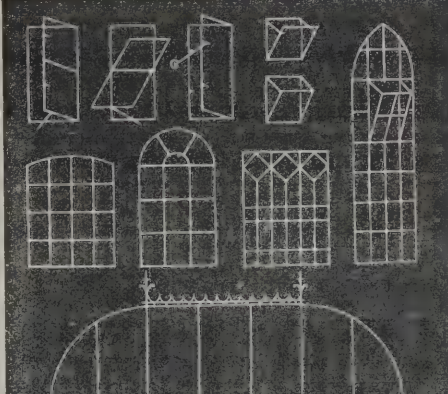
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## ROCHDALE.

For Re-erection of Clock Tower, &c., and Restoration of Town Hall, Rochdale. Mr. ALFRED WATERHOUSE, R.A., Architect. Quantities by Messrs. Robinson & Windsor, 9 Mount Street, Manchester.

PETERS & SONS, Rochdale (accepted) . . . . . £11,617 0 0

## SALTBURN.

For the Erection of Cluny Lodge, Saltburn-by-the-Sea, Yorkshire. Mr. WILLIAM PEACHEY, Architect, York. Quantities by the Architect.

## Only Whole Tender.

France, Middlesbrough . . . £2,261 14 0  
Amount of lowest tenders . . . 2,007 12 8

## Excavator, Bricklayer, and Mason.

Kidd, York . . . . . 1,080 11 10  
Spencer, York . . . . . 1,015 0 0  
Robson, West Hartlepool . . . 958 0 0

## Plasterer added to above.

Johnson, Middlesbrough . . . 1,426 0 0

## Plasterer.

Rawling & Son, York . . . 235 0 0  
Robson, West Hartlepool . . . 199 0 0  
Kidd, York . . . . . 175 0 0  
Richardson, Dewsbury . . . 117 18 4

## Tiler.

Wandless, Darlington . . . 180 0 0  
Johnson, Middlesbrough . . . 167 7 0  
Hardgrave, York . . . . . 165 0 0  
Pickles Bros., Leeds . . . 163 0 0  
Kidd, York . . . . . 158 9 6  
Robson, West Hartlepool . . . 112 2 4

## Plumber, Glazier, and Gasfitter.

Braithwaite & Co., Leeds . . . 258 0 0  
Hodgson, York . . . . . 243 0 0  
Woffenden, Leeds . . . . . 237 16 1  
Shonks Smith, York . . . . . 234 8 8  
Kidd, York . . . . . 233 18 9  
Hartley, York . . . . . 233 16 0  
Lambert, Middlesbrough . . . 225 5 0  
Crowther, Leeds . . . . . 214 4 6

## SALTBURN—continued.

## Carpenter and Joiner.

Leonard, South Bank . . . £814 0 0  
Kidd, York . . . . . 800 0 0  
Wilson & Co., York . . . . . 633 0 0  
Hudson Bros., Middlesbrough . . 575 0 0  
Johnson, Middlesbrough . . . 569 0 0  
Curson, West Hartlepool . . . 560 0 0  
Robson, West Hartlepool . . . 550 0 0

## Bellhanger.

Dearlove & Dodd, York . . . 9 10 0  
Harrison & Son, Darlington . . . 9 10 0

## Painter.

Mossom & Son, Saltburn . . . 45 17 6

The acceptance of tenders is deferred for a time.

## SHELFORD.

For New House, Shelford, Cambs., for Mrs. Hall. Messrs. ARUNDELL & TARTE, Architects, 30 Great James Street, London, W.C., and 2 Free School Lane, Cambridge.

Bell & Sons, Cambridge . . . £1,445 0 0  
Lindall, Cambridge . . . . . 1,400 0 0  
Saint & Sons, St. Ives, Hunts. . . 1,292 13 0  
Johnson & Manners, London . . 1,280 0 0

## SHORTLANDS.

For Erection of Stabling at Rutland Lodge, for Mr. W. W. Palmer. Mr. CHAS. J. SMITHEM, Architect.

Ansell . . . . . £821 0 0  
Lowe . . . . . 649 15 0  
Taylor & Son . . . . . 610 0 0

## STONEHAVEN.

For the Malleable Iron Girder, Concrete, and Mason Work Connected with the Widening of the Bridge of Stonehaven. Mr. G. S. HIRD, C.E., Bridge Street, Aberdeen.

## Accepted Tenders.

Abernethy & Co., Aberdeen, engineer and ironfounder . . . £170 0 0  
Wilson, Cameron Street, Stonehaven, builder . . . . . 104 0 0

## SUTTON.

For Alterations and Additions to the High School for Girls at Sutton, Surrey, for the Girls' Public Day School Company, Limited. Mr. J. OSBORNE SMITH, Architect. Mr. F. H. A. HARDCASTLE, Surveyor.

Stephens & Son . . . . . £5,448 0 0  
Humphreys . . . . . 5,380 0 0  
Mays & Harper . . . . . 5,200 0 0  
Conder . . . . . 4,984 0 0  
Wall . . . . . 4,745 0 0  
Higgs & Hill . . . . . 4,694 0 0  
Searchfield . . . . . 4,596 0 0  
Manley . . . . . 4,563 0 0

## SWANSEA.

For Alterations and Additions to Oxford Street Chapel, Swansea. Mr. T. P. MARTIN, Architect, Heathfield Street, Swansea.

David & Richards . . . . . £657 0 0  
Jones . . . . . 649 0 0  
Loveday & Co. . . . . 645 0 0  
Morgan . . . . . 613 0 0  
Billings . . . . . 593 0 0  
Thomas, Watkins & Jenkins . . . 530 0 0  
Bennett Bros. . . . . 513 0 0  
White . . . . . 485 0 0  
Williams . . . . . 445 0 0  
Walters . . . . . 437 0 0

## STOURBRIDGE.

For Construction and Maintenance for Six Months of 8,014 yards of 9-inch and 10-inch Earthenware Pipe Sewers, with Manholes, Lampholes, Flushing Chambers, and other Works, within the Township of Upper Swinford. Mr. W. FIDDIAN, 98 High Street, Stourbridge, Surveyor.

J. & T. Binns, Lincoln . . . £4,017 10 0  
Dorse & Son, Cradley Heath . . . 3,676 10 6  
Slinger, Cleckheaton . . . . . 3,527 4 7  
Woodham & Fry, Greenwich . . . 3,047 0 0  
Botterill, London . . . . . 2,958 0 0  
Jevons & Son, Dudley . . . . . 2,827 10 2  
Innes & Wood, Birmingham . . . 2,733 11 0  
Hughes & Son, Lower Gornal . . . 2,665 0 0  
Vale, Kidderminster . . . . . 2,631 10 0  
Guest, Stourbridge . . . . . 2,472 8 2  
LAW, Kidderminster (accepted) . . 2,376 13 10

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The hitherto unsolved problem of "Ventilation Without Draught" is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the "French Hospital and Dispensary," issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the "Island Room" of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

"VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a syphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success."



**STOURBRIDGE—continued.**

For Construction and Maintenance for Six Months of 6,859 yards of 9-inch and 12-inch Earthenware Pipe Sewers, Manholes, Lampholes, Flushing-chambers, and other works, Stourbridge. Mr. W. FIDDIAN, Surveyor.

|                               |        |    |    |
|-------------------------------|--------|----|----|
| J. & T. Binns, Lincoln        | £3,469 | 10 | 0  |
| Slinger, Cleckheaton          | 2,947  | 3  | 6  |
| Dorse & Son, Cradley Heath    | 2,840  | 16 | 11 |
| Botterill, London             | 2,525  | 0  | 0  |
| Woodham & Fry, Greenwich      | 2,506  | 0  | 0  |
| Innes & Wood, Birmingham      | 2,395  | 3  | 3  |
| Vale, Kidderminster           | 2,392  | 10 | 0  |
| Jevons & Son, Dudley          | 2,379  | 9  | 9  |
| Hughes & Son, Lower Gornal    | 2,231  | 9  | 2  |
| Guest, Stourbridge            | 2,097  | 10 | 8  |
| LAW, Kidderminster (accepted) | 1,960  | 9  | 9  |

**SWINDON.**

For Erection of the Baptist Tabernacle and Schools, Regent Street, Swindon. Mr. W. H. READ, Architect.

|                         |                                       |
|-------------------------|---------------------------------------|
|                         | If brick columns<br>in lieu of stone. |
| Forse, Bristol          | £6,990                                |
| Jones & Co., Gloucester | 6,880                                 |
| King, Gloucester        | 6,695                                 |
| Jones, Gloucester       | 6,400                                 |
| Webb, Swindon           | 6,148                                 |
| Phillips, Swindon       | 6,054                                 |
| Williams, Swindon       | 6,000                                 |
| Wiltshire, Swindon      | 5,936                                 |
| BARRETT (accepted)      | 5,798                                 |
|                         | £6,840                                |
|                         | 6,690                                 |
|                         | 6,498                                 |
|                         | 6,260                                 |
|                         | 6,026                                 |
|                         | 5,906                                 |
|                         | 5,800                                 |
|                         | 5,796                                 |
|                         | 5,644                                 |

**THOMASTOWN.**

For Building Dispensary, &c., at Ballyhale, Thomastown Union.

|                                |      |   |   |
|--------------------------------|------|---|---|
| Hearns, Hugginstown            | £240 | 0 | 0 |
| Davis, Thomastown              | 235  | 0 | 0 |
| Brannock, Rathduff             | 230  | 0 | 0 |
| Hahassy, Harristown            | 220  | 0 | 0 |
| MORRISSEY, Coolmore (accepted) | 196  | 0 | 0 |

**THURSO.**

For Construction of Stone Bridge, Thurso. Messrs. MACBEY & GORDON, Engineers, Elgin.

MALCOLM, Dunnet (accepted) . £3,659 0 0

**TEDDINGTON.**

For Construction of Suspension Foot-bridge over the Thames, and Lattice Girder Foot-bridge over the Lock Cut adjoining, for the Teddington Local Board. Mr. GEORGE POOLEY and Mr. E. THOMPSON, Joint Engineers, 26 Charing Cross.

|                           |        |   |   |
|---------------------------|--------|---|---|
| Tildesley, Willenhall     | £8,164 | 0 | 0 |
| Hill & Co., London        | 7,803  | 0 | 0 |
| Vernon & Co., Westminster | 6,633  | 7 | 0 |
| Hickinbotham, Teddington  | 6,512  | 0 | 5 |
| Dawnay, London Bridge     | 6,505  | 0 | 0 |
| Davies, Bermondsey        | 6,100  | 0 | 0 |
| Kirk & Randall, Woolwich  | 5,970  | 0 | 0 |
| Chafen, Rotherhithe       | 4,900  | 0 | 0 |
| Cooke & Co., Battersea    | 4,818  | 0 | 0 |

**TOWCESTER.**

For Alterations and Additions to Malt-houses at Towcester, for Messrs. P. Phipps & Co. Messrs. H. STOPES & Co, Architects, 24A Southwark Street, S.E.

|                                   |        |   |   |
|-----------------------------------|--------|---|---|
| Claridge, Banbury                 | £1,986 | 0 | 0 |
| Cosford, Northampton              | 1,896  | 0 | 0 |
| Clayson Bros., Cooknoe            | 1,666  | 0 | 0 |
| F. & S. Orchard, Banbury          | 1,620  | 0 | 0 |
| Ireson, Northampton               | 1,574  | 0 | 0 |
| Heath, Towcester                  | 1,571  | 0 | 0 |
| Kimberley, Banbury                | 1,530  | 0 | 0 |
| TAYLOR & GRIST, Burton (accepted) | 1,432  | 0 | 0 |

**WELLINGTON, SOMERSET.**

For Building Warehouse and Offices, Wellington, Somerset. Mr. E. T. HOWARD, Architect, North Street, Wellington.

|                             |        |   |   |
|-----------------------------|--------|---|---|
| Barrow                      | £2,650 | 0 | 0 |
| Nurse                       | 2,549  | 0 | 0 |
| Dinham & Verrier            | 2,510  | 0 | 0 |
| Poole                       | 2,400  | 0 | 0 |
| SPILLER, Taunton (accepted) | 2,390  | 0 | 0 |
| Follett                     | 2,277  | 0 | 0 |

**WITNEY.**

For Heating the Old Wesleyan School, Witney Oxfordshire.

BACON & Co., London (accepted).

**TUNSTALL.**

For Improvement Works, Tunstall.

|        |                         |           |
|--------|-------------------------|-----------|
|        | <i>Victoria Street.</i> |           |
| Mackay | .                       | £339 16 0 |
|        | <i>Grosvenor Place.</i> |           |
| Buck   | .                       | 140 11 4  |

**WELLINGBOROUGH.**

For Building School and Class-rooms, Wellingborough. Mr. E. SHARMAN, Architect, Market Square.

|                         |      |   |   |
|-------------------------|------|---|---|
| Underwood               | £996 | 0 | 0 |
| Leek                    | 930  | 0 | 0 |
| Brown                   | 915  | 0 | 0 |
| Henson                  | 910  | 0 | 0 |
| Harrison                | 900  | 0 | 0 |
| Clayson Bros., Cogenhoe | 889  | 0 | 0 |
| Marriott                | 879  | 0 | 0 |

Remainder of Wellingborough.

**WEST GRINSTEAD.**

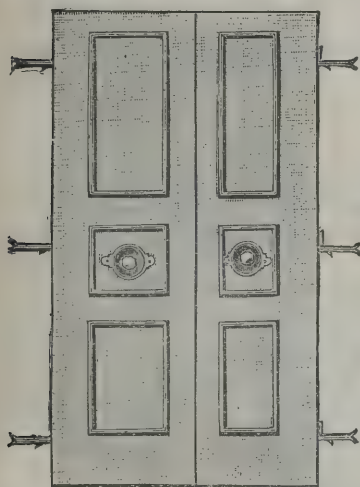
For Building Infant School and Lavatories, Jolesfield Schools, West Grinstead. Mr. R. STOTESBURY, Architect, Horsham.

|  |      |    |   |
|--|------|----|---|
| Parsons, Brighton                              | £297 | 3  | 0 |
| Woolgar & Sons, Horsham                        | 287  | 0  | 0 |
| Summershell, Shipley                           | 269  | 14 | 0 |
| Fowler & Sons, Cowpold                         | 265  | 0  | 0 |
| Cook, Crawley                                  | 257  | 15 | 0 |
| Harding, Shipley                               | 255  | 15 | 0 |
| Etheridge Bros., Horsham                       | 253  | 0  | 0 |
| SAYERS & BURDFIELD, Partridge Green (accepted) | 246  | 17 | 6 |
| Peters, Horsham                                | 230  | 0  | 0 |
| Wheatland, Crawley                             | 205  | 0  | 0 |

**WINDERMERE.**

For building Block of Warehouses, Stable, Cart-house and Bakery, for Mr. T. H. Walton. Mr. ROBERT WALKER, Architect. Quantities by the Architect.

|                              |        |   |   |
|------------------------------|--------|---|---|
| Pattinson, walling, &c.      | } £900 | 0 | 0 |
| Clarke, joiner               |        |   |   |
| Armstrong, plastering        |        |   |   |
| Musgrave, plumbing           |        |   |   |
| Moore & Steel, painting, &c. |        |   |   |

**WALTER JONES,**

MAGNET WHARF, BOW BRIDGE, E.,

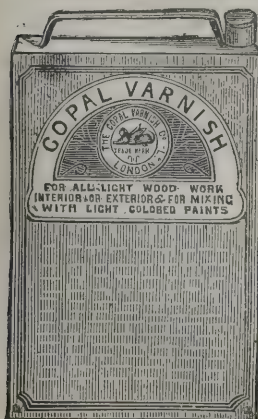
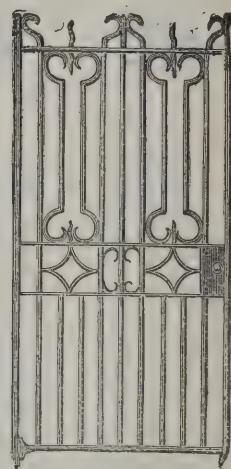
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## AN HISTORICAL LUTE.

AMONGST the recent additions to the Historic Loan Collection is Queen Elizabeth's lute (lent by Lord Tollemache of Helmingham), which was left by the Queen, in 1584, at Helmingham Hall, Suffolk, where it has been preserved until the present day. The lute is in an exceptionally fine condition, and bears the maker's name, "Joannes Rosa Londini Fecit. In Bridwell, the 27th of July, 1580." An extremely valuable collection of early manuscripts has also been received from the Stiftsbibliothek of St. Gall, including the celebrated copy of Notker's German translation of the Psalms, and the Antiphoner traditionally said to have been brought from Rome to St. Gall in the eighth century. Collections of portraits in oil have been received from the Royal Society of Musicians and the Bodleian Library. The decorated spinet made for Queen Christina is lent by Lord de Lisle; and autograph letters of Mendelssohn, Franz, &c., Beethoven's will, and many other valuable manuscripts have also been added to the collection.

## HOSPITAL CONSTRUCTION.

At the monthly meeting of the North-Western Association of Medical Officers of Health in Manchester, Mr. Lawrence Booth, architect, read a paper on the construction of hospitals for infectious cases, which he illustrated by the drawings of the infectious hospital, of which he is the architect, now being erected for the county justices at Whittingham. The hospital is being built on the pavilion system of isolation. The pavilions are one storey high, and are completely cut off from the administrative block. The windows are so placed as to secure cross ventilation without exposing the patients to a draught, and an arrangement is provided for the escape of emanations through the roof. The wards are to be warmed by open fireplaces. The sewage is minimised by the introduction of earth closets, and the drainage from the roof is entirely distinct from that of the sewers. The

corridor floors are to be formed of concrete, with glazed tiles at the surface, pitch pine being laid in the wards. The dimensions of the wards allow 1,400 cubic feet of air to each patient.

## DARTMOUTH WATER SUPPLY.

THE works for increasing the water supply of Dartmouth are now completed, and the new reservoir, which is situated in the Ford Valley near the town, has been formally opened in the presence of the Mayor and Corporation.

The increased supply is intended chiefly for the southern portion of the town, which was imperfectly supplied before. The works were carried out from the designs and under the superintendence of Mr. E. H. Back, C.E., the borough surveyor, the contractor being Mr. James Hawkins, of Dawlish.

## THE A B C PROCESS.

DR. C. MEYMOTT TIDY and Professor Dewar have made a report, after a lengthened and exhaustive examination of the A B C Process at Aylesbury, for the purpose of determining its efficiency. The conclusions they arrive at are as follows:—

That the A B C Process produces a clear effluent, free from suspended matter and devoid of smell; that the effluent is uniform, notwithstanding the very varied nature and concentration of the sewage; that as the strength of the sewage increases, the precipitation is more complete; that the Process removes over 80 per cent. of the total oxidisable organic matter; that it precipitates 60 per cent. of the organic matter in solution, and of the residue left in the effluent at least two-thirds are non-albuminous, and, therefore, of a nature less liable to putrefactive and other changes; that the process is carried on without nuisance, the sewage being immediately and completely deodorised, and the entire works free from any objectionable smell; and that it produces a manure containing an average of 3·8 per cent. of ammonia

calculated on the perfectly dry manure, or if with 20 per cent. of water, 3 per cent. of available ammonia, and also 5 per cent. of phosphates reckoned as tricalcic phosphate of lime.

## SOFT WATER AND LEADEN PIPES.

A CORRESPONDENT under the signature of "Country House" writes from the Athenæum Club as follows:—"I have some extremely soft water which I require to be conveyed by gravitation a distance of half a mile, and laid on my house. It is injuriously affected by lead, and I should be glad to know what is the cheapest, safest, and most lasting material for a pipe in which to convey it. The water is required both for drinking and general purposes."

[The lead-encased, block-tin pipes of Messrs. Henry Gardner & Co., of Bridgewater Street, Liverpool, would meet the circumstances of the case.—ED.]

## IRON TRADE IN SPAIN.

THE Spanish ironfounders and manufacturers have of late years been making considerable progress. They have good machinery, rich minerals, and coal. They have consequently no need for the high duties at present imposed upon foreign iron manufactures. Tools and hardware, including locks and screws, are supplied chiefly, so far as the better qualities are concerned, by England, the commoner descriptions coming from Germany and France. Recently, however, these have begun to be drawn from the United States. Wrought iron for building purposes, so far as it is derived from abroad, is received from Belgium, and the use of iron for this purpose is increasing, architects preferring it to wood. It is, however, becoming increasingly difficult for Belgian producers to compete with those of Spain, the latter having recently reduced their prices considerably. In iron castings for columns, pipes, and gratings, foreign producers find it quite impossible to compete with Spanish foundries.

## THE "HARDING" VENTILATING COMPANY,

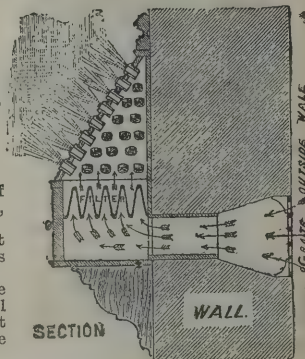
30 EAST PARADE, LEEDS.

HARDINGS' PATENT AIR DIFFUSER  
FOR VENTILATING ALL KINDS OF BUILDINGS.

Mr. T. PRIDGIN TEALE, F.R.C.S., M.A., Surgeon to the General Infirmary at Leeds, says of Hardings' Diffuser in his book called "Dangers to Health":—"I am satisfied that by means of this apparatus, we can secure in a town freshness of atmosphere, absence of draught, and exclusion of dirt."

The fresh air is conducted through a grate and aperture in the wall, as shown on section, about 7 feet 6 inches above the floor level; it is then conveyed through the filter, and passed into the room through a series of small tubes placed at an angle of about 30 deg. with the wall.

By these means the currents of air rushing into the apartment are compressed whilst passing through the tubes. The currents of air, as soon as liberated, expand, cut into, and break each other up, and diffuse in all directions so effectually that no draught or chilly sensation can possibly be experienced by the occupants, and at the same time a large volume of pure air is constantly being admitted and dispensed evenly through the apartments.



## CHURCH WALL VENTILATOR.—As used in the ventilation of Archbishop Zouche's Chapel, York Minster.

The DEAN OF YORK, with reference to the ventilating of Archbishop Zouche's Chapel at York Minster, says:—"I think the ventilation is perfectly successful, and all I have spoken to about it are well satisfied with it, and much pleased with the result."

OUR PATENT EXTRACTOR is the best in the Market, and is supplied at a very much lower price than any other.

CHURCH WINDOW VENTILATOR.—These Ventilators are used for Churches, Chapels, and other Public Buildings where it is not desirable to have holes cut through the walls to admit air in the usual manner. The appearance is not more noticeable than the ordinary Hopper Ventilator so frequently seen.

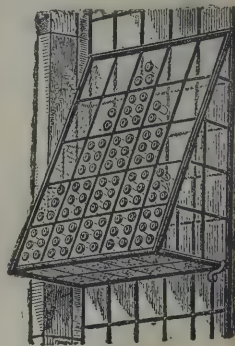
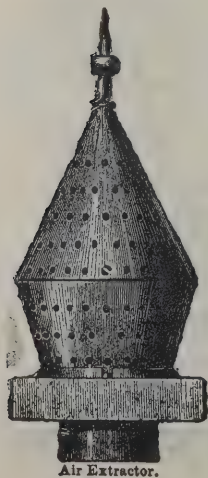
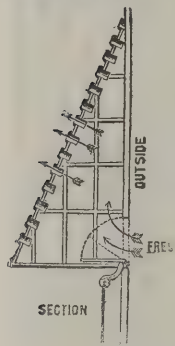
"Armley, Leeds, Oct. 29, 1883.

"GENTLEMEN,—I have pleasure in stating that in my opinion your system of ventilation, introduced in our Church this summer, is a decided success. Heretofore when the Church has been well filled at the Evening Service, I have been almost exhausted by the effort of speaking before I have got half through. On Sunday night, October 7, at our Harvest Thanksgiving, we had a very large congregation, and I preached without the least feeling of weariness or exhaustion. I shall be glad to hear that your Air Diffusers are being widely adopted.—I am, yours truly, JOHN GREGORY, Minister of Oak Road Congregational Church, Leeds."

These Ventilators are more suitable for Schools, Warehouses, and other Buildings where cheapness is an object. The result is precisely the same as in our other styles, at a very much smaller cost.

A reduction in price is made where a number of Diffusers is required.

Estimates and further information given on application to the "HARDING" VENTILATING CO., 30 East Parade, Leeds.





## RAILWAY VIADUCT.

THE directors of the Glasgow and South-Western Railway are about to replace the wooden bridge over the Urr, near to Dalbeattie, on the Castle Douglas line, with a large girder viaduct; and the work has been let to Mr. J. B. A. McKinnel, of the Dumfries Ironworks, the contract price being 15,000*l*. The total length of the viaduct is to be 426 feet, and 825 tons of metal will be employed in its construction. It will be founded on fourteen iron cylinders 8 feet in diameter, and filled with concrete. These will be of an average height of about 20 feet, and above them will be a height of 20 feet of solid masonry, on which the girders will be extended. The rails will be about 33 feet above the ordinary water-level. The old bridge is of sufficient width to carry a double line of rails, and half of it will be retained until the new structure is sufficiently advanced to allow of the traffic being transferred to it.

## GLASGOW BRIDGE.

THE Glasgow Town Council have adopted a report and plans by Messrs. Bell & Miller, engineers, in reference to the widening of Glasgow Bridge. Accompanying the report is a plan showing how they propose to effect the alteration. It is pointed out that a total increase of width of 30 feet would be given to the bridge, making it 88 feet between the parapets, or 4 feet wider than Westminster Bridge, the pavements being each 15 feet and the roadway 58 feet wide. The foundations of the addition on either side would be formed by cast-iron cylinders up to the low-water line, filled up with Portland cement concrete. Upon these would be built the masonry of the piers in the same style as at present, the granite facing of the present piers being moved forward and rebuilt. The arched girders, cornice, and parapet would be of steel and iron. The excavation of the cylinders while sinking would

be done under compressed-air pressure, to prevent any disturbance of the present foundations. The great additional width would remove, to a great extent, the inconvenience arising from the interference of the cross with the through traffic, as there would be so much room to avoid obstruction. With the traffic regulated as it now was, and the foundations protected from any scour which might tend to undermine them, there was nothing to prevent the bridge from serving all the purposes for which it was intended for centuries to come. The beauty of Telford's fine bridge was not interfered with, as the piers would be the same as at present, and all the main outlines were preserved exactly the same. It is estimated that the cost of this improvement would be little over, if at all, the sum of 25,000*l*. received from the Caledonian Railway Company for the purpose of widening the bridge.

## LUMBER TRADE.

THE following particulars are given in the report of Consul Cridland for Mobile:—

This important branch of business, which is one of the leading and growing industries of Mobile and South Alabama, has during the past year held its own, and, notwithstanding the general depression in trade, many shipments have been made to new and important markets, showing as it does that the dealers and exporters who are active and energetic have been alive to any change in the trade, and whenever the demand began to fall off in one direction they did not wait for orders from other places, but sought new and important markets, causing Mobile lumber to become well and favourably known in Europe and many sections of the United States. The trade of the past year, as represented by shipments in vessels, would no doubt have been larger than it was if it had not been for the depressed condition of Northern and Eastern markets, and the stopping, to a great extent, of railroad building in Mexico and Texas. Then, again, the mill men generally prefer to cut sawn timber instead of small

stuff when prices are favourable, which was the case the past year, as a very large business was done in sawn timber—in fact, larger than any previous year. The shipments in 1884 by rail to the interior and Western markets, also North, were very large, and I am informed by dealers that this branch of the lumber trade was larger than in 1883. The total shipment of pitch pine last year to foreign and coast ports from Mobile was about 22,200,000 feet against 26,700,000 feet in 1883, showing a decrease of 4,500,000 feet. The exports of lumber to foreign ports in 1884 show an increase of about 372,000 feet as compared with 1883, which was caused by a very large export of the article to Great Britain, as the total shipment in that direction was larger than one-third of the total exports foreign. The exports to France, Mexico, and Cuba show a heavy decrease, while there was a decided increase in lumber shipments to Germany, Holland, Spain, Trinidad, and Hayti. Large shipments have been made to Belgium, Italy, and Monte Video against none last year.

Although the total shipments foreign exhibit an increase, yet the total value is about 11,650 dols. less than last year, which shows that prices of lumber ruled lower than last season.

## BUILDING IN PORTSMOUTH.

SEVERAL important works are in progress at Portsmouth, including two halls to be built by private companies, and an extensive wharf, to be erected by the Corporation, at an estimated cost of 30,000*l*. The foundation-stone of the latter was laid a few days since by the Mayor (Councillor Moody), who gave a luncheon in honour of the event, the guests at which included Mr. H. P. Foster, of John Street, Adelphi, the quantities surveyor to the Corporation, who, in that capacity, has been connected with the erection of a gaol and lunatic asylum, and the execution of extensive drainage works. As soon as the question of site has been settled, Mr. Foster will take out quantities for a new Town Hall.

## MAKERS TO HER MAJESTY,

By Special Appointment, A.D. May 13, 1876.

“STRONG ROOMS, DOORS, LOCKS, & SAFES.”

TO THE BANK OF ENGLAND AND ITS BRANCHES.

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STRONG ROOMS & PARTYWALL DOORS  
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BANKS,  
MANSIONS, HOTELS.

SPECIAL SUITES  
FOR HOSPITALS, ASYLUMS,  
MUSEUMS, PRISONS.

SELECTED LIST OF HOTELS FITTED WITH HOBBS & CO.'S LOCKS:—

The METROPOLE, GRAND, FIRST AVENUE, ROYAL FOREST,  
BENTLEY PRIORY, ROYAL, LANGHAM,  
GROSVENOR, WESTMINSTER PALACE, ALEXANDRA, HATCHETT'S,  
BUCKINGHAM, INNS OF COURT, INTERNATIONAL, &c.



**BOYLE'S IMPROVED SELF-ACTING  
AIR-PUMP VENTILATORS.**

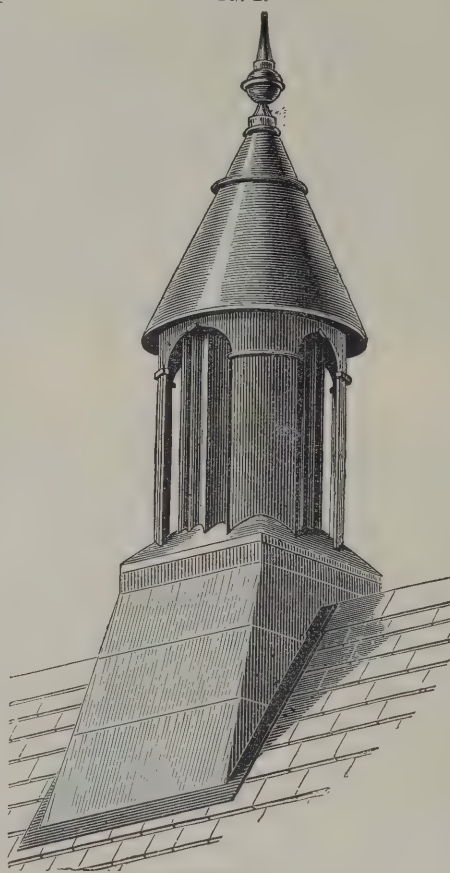
MESSRS. ROBERT BOYLE & SON, 64 Holborn Viaduct, and 110 Bothwell Street, Glasgow, have patented an improvement in their well-known Self-acting Air-pump Ventilator, which experiments have fully demonstrated not only adds considerably to the extracting power, but renders the ventilator absolutely waterproof. This improved modification, whilst most ingenious in construction, is simpler in the working parts than the form of the Air-pump ventilator which has hitherto been manufactured, and which will now be withdrawn from the market, being superseded by this the latest improvement. The Messrs. Boyle have, as usual, done their best to meet the requirements of architects by making even the plainest pattern of the improved ventilator ornamental and neat in design, which effectually adds to the appearance of it.

This is decidedly a step in the right direction. We understand that, instead of the price of the improved ventilator being higher, as might have been expected, owing to its being so much more powerful and ornamental, it will be even lower in price than the old form of ventilator, Messrs. Boyle having found such an immense increase in the number of ventilators sold and buildings ventilated owing to the reduction made on previous prices, that they have wisely determined to supply their ventilating appliances at the lowest possible price consistent with efficiency and first-class workmanship, their aim being to bring a really reliable and well-constructed ventilator within the reach of all, so that there need now be no excuse for the defective ventilation of any building on the score of expense, as it will be found, by comparing the price-list of the improved Air-pump ventilator with those of other ventilators, that it is the cheapest of its class in the market.

The accompanying diagrams, figs. 1 and 2, show the elevation and plan of the plainest and cheapest pattern of the improved ventilator. In the plan of the ventilator (fig. 2), A indi-

cates the opening into which the wind passes and impinges upon the deeply-curved bell-mouth arrangement B, in which a large body of air is

FIG. 1.

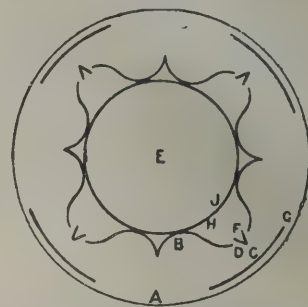


Registered Design.

collected and forced into the narrow annular space C, at which point, owing to the compres-

sion of the air, which cannot otherwise escape or free itself, it attains a greatly accelerated velocity, and, in passing over the slip D, creates a powerful induced current, exhausting the air with considerable rapidity from the central chamber E. The foul air immediately rushes up the shaft to supply the place of the air extracted, and is in its turn drawn off, thus creating a continuous and powerful upward current in the shaft connected with the apartment being ventilated. F, diaphragm to deflect the air

FIG. 2.



over slip D. G, curved baffle plate or guard to protect the slip opposite, concentrate the current, and prevent it from expanding and being deflected backwards without passing over the slip D. H, space dividing the exit slip from the central chamber, and to receive and run off any water that might find its way in when the ventilator is used on board ship with seas sweeping over it. J, deep lip or rim to prevent any water that might enter the space H from passing into the central chamber and down the shaft. The shaft attached to the ventilator may be made any diameter required, but it should be borne in mind that the extracting power of a properly constructed roof ventilator lies exclusively in the head, and is solely determined by the size of the same. We can safely predict a very large sale for the improved ventilator, and we think that the name of the inventors is a sufficient guarantee that it will really answer the purpose for which it is intended.

ESTABLISHED 1838.

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Colour, Paint, and Varnish Makers, Oil Boilers and Refiners,

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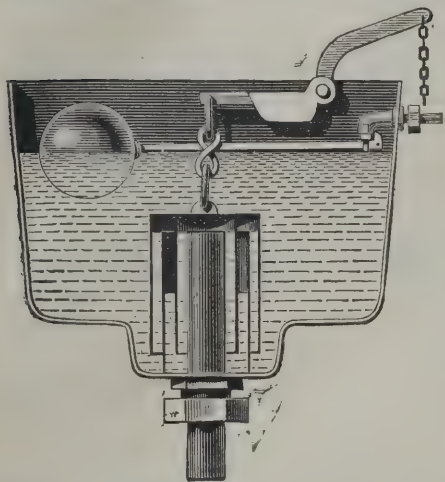
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NOTABLE EXHIBITS AT THE  
INVENTORIES EXHIBITION.

NOTWITHSTANDING the many new water-waste preventers that have of late years been introduced, including several on the syphon principle, there appears to have been room for improvement judging from the exhibit of Messrs. Humpherson & Co., 331 King's Road, Chelsea, S.W., in the South Gallery, North Court, Stand 222. It will be seen by the appended illustration that it has a well-bottom, which enables the full flush of two

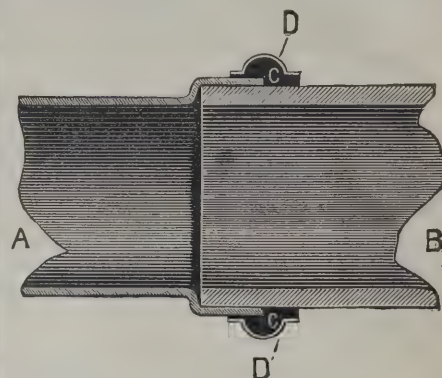


gallons to be secured each time it is set in action, which is not obtained with all the flat-bottomed ones. But it is in the chambers that effect the syphon action that the greatest novelty is seen. These are three in number, the inner one being of stout galvanised iron, and the outer ones forming the rising cap are composed of two and are made of copper. By this mode the air is more securely bound between the cylinders, and the action may be thus described. A small quantity of water

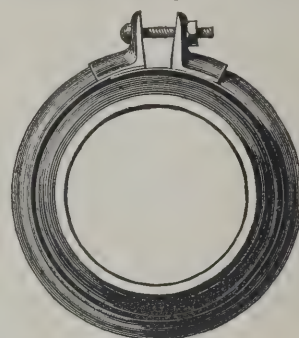
being retained in the well after the cistern has been emptied, the water again entering causes the air, as we have observed, to become securely bound, and prevents the water from passing over the inner cylinder. The lever being raised, a partial vacuum is formed, and the water is forced into it by atmospheric pressure, causing it to overflow the centre pipe, when the contents are discharged by the usual syphon action. In drawing the lever down, its fall is arrested at a certain point, so that it will return to its proper position with ease, which cannot be said of all syphon cisterns worked with a ball-valve, which is the only mechanism connected with this appliance. Another improvement is secured by attaching a long nose to the inlet pipe, which, carried to nearly the bottom, causes the inflow of water to take place without noise. It has a full 1½-inch waterway all through, causing a powerful flush to the last and the cistern to be emptied whether the lever is held down the whole time or not. Owing principally to the large waterway, it is particularly adapted for positions where only a low head of water is accessible, flushing effectually at a height of only two feet. Mr. Humpherson in constructing this cistern appears to us to have had in view the best means of making the most of the orthodox two gallons, which is too small a quantity to properly flush some closets. Why do not London water companies take pattern by some of the provincial ones and allow a larger quantity? There are many provincial towns where water is not at times so plentiful as in the metropolis, and yet the authorities consider it necessary for sanitary purposes to insist on a larger consumption, two and a half and three gallons being commonly used.

Another invention, shown by Messrs. Humpherson, is an improved pipe-joint, invented and patented by them. The object of this is to secure a perfect joint at the junction of the earthenware trap and metal soil pipe. The illustrations will enable the invention to be understood readily, the first one showing the two pipes, and the mode of affixing the "seal," and the other the invention itself, which consists of a grooved or hollow metal ring, open at

one part of its circumference, into which is placed a thick vulcanised indiarubber ring made of the same sectional shape as the ring. The ring being placed over the joint, the metal rim is



added to it, and, being drawn closely together by means of the nut and screw, the indiarubber becomes distended, but the two form one homogeneous whole. We need not descant further upon the advantages of this invention,

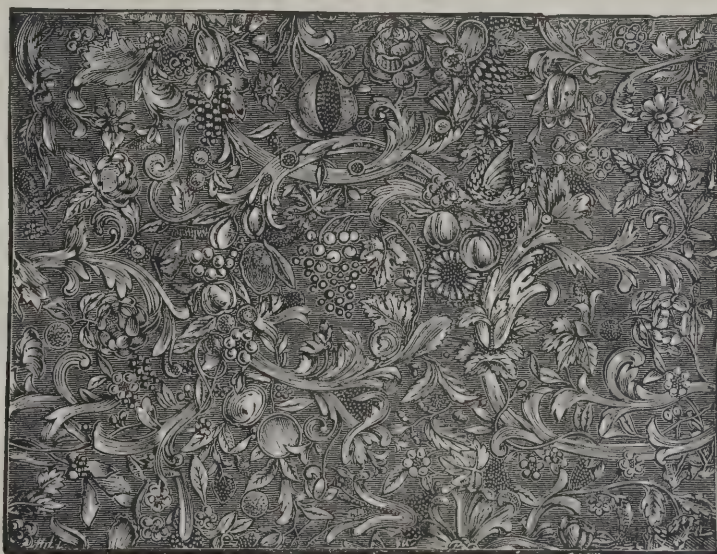


as all plumbers know the difficulty of obtaining an hermetically sealed joint under the circumstances we have mentioned, that will remain secure for any length of time. By the use of

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this invention, so easily applied, contraction and expansion takes place without breaking the seal in the least, and it will resist any amount of pressure, while accommodating itself to different variations of temperature. We have no doubt its advantages will be readily conceded, and that it will meet with the success it deserves.

### THE HOLLOWAY SANATORIUM.

THIS institution, which has been erected at Virginia Water, and which is intended as a sanatorium for people of the middle class who are suffering from mental infirmities but are not hopelessly deranged, commenced some years since by the late Mr. Thomas Holloway, and completed under the direction of his executors, was formally opened on Monday afternoon by the Prince of Wales.

The Holloway Sanatorium, although erected for the benefit of those who are suffering from mental disorders, is not intended to be devoted to the use of an ordinary asylum for the insane. Amongst the rules is one that no patient should remain an inmate more than a year; another, that no one will be received whose case is considered hopeless, and none will be readmitted after being discharged.

The building in front shows an extended façade of 528 feet, with a projecting structure in the centre, with a square tower 140 feet in height. The building in front has eight bays, is of red brick dressed with Portland stone, and is broken up by lofty crenelated gables, to form separate groups of houses, which are connected. The number of rooms in the building is 480, giving accommodation for 240 patients and servants, though this on a pressure could be extended, for as at present designed the majority of the patients are intended to have separate bedrooms and sitting-rooms. The interior fittings are of finished character. Everywhere there is a preponderance of bright colour. The two principal apartments are the recreation-hall and the refectory. The former is 80 feet in length by 60 in width, with a pitch of roof to 60 feet at

the ridge. On the south it is lighted by seven windows, and on the north side by four. The roof is of the hammer-beam type, all the span-drels being filled with pierced tracery. The windows are of stained glass, and around the walls is a series of paintings, with likenesses of the Queen, the late Prince Consort, the Prince and Princess of Wales, Lord Beaconsfield, Mr. Gladstone, and many notables in history, while at the upper end are full-length portraits of Mr. and Mrs. Holloway, and smaller ones of Mr. Martin-Holloway and Mr. Crossland, the architect. The treatment of the walls is arabesque, hardly a square inch being left uncoloured or ungilt. The flooring is of oak parquet. This is approached from an entrance-hall springing from three richly moulded arches, while the whole surface of the wall is most sumptuously decorated. The dining-hall, a room 54 feet in length and 32 feet broad by 40 feet in height, has the walls covered with Watteau paintings by the students of the Art Training School, under Mr. Poynter, R.A., the general surroundings being of the same gorgeous character as the rest of the building.

The cost of the institution, with fittings and grounds of thirty-four acres, has so far been nearly 300,000*l.* The premiated designs for the building, by Messrs. Crossland, Salamons & Jones, were published in *The Architect*. Messrs. Thomas Lawrence & Son, of Bracknell, Berks, supplied all the red rubbers and bricks.

### FEES FOR PLANS.

MR. GUEST LUCKETT, architect and surveyor, of Aylesbury, sued Mr. C. T. Adams, auctioneer, &c., of Stoke Mandeville, in the Aylesbury County Court, for 1*l.* 10*s.*, for preparing drawings for a schoolmaster's house at Stoke Mandeville. He was asked to perform it, and agreed to, at 2½ per cent. commission on the amount of the contract. Tenders were advertised for, but the work was then abandoned; but the house had since been built from plans by Mr. W. Y. Green. In reply to Judge Whigham, plaintiff said the front of the house was very much like what witness had planned.

Defendant said the school-managers had deputed him to get specifications. He told plaintiff the school was very poor, and the extreme limit of the cost of the building must be 150*l.* When plaintiff's plans were shown to builders they all laughed at the idea of their building the house according to them for the sum named. Plaintiff replied that there was an existing house, for which he allowed 20*l.*, which would raise the amount to 170*l.* Defendant, in reply to the Judge, said he got the house built for 170*l.*

His Honour thought the plaintiff entitled to something for his labour. Defendant replied that if it were his own affair he would give it; but he was acting for the school-managers, and theirs was a very poor parish.

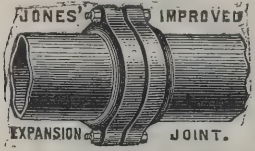
His Honour found for a guinea, and ordered each party to bear his own costs.

### A VERBAL AGREEMENT.

At the Guildhall, Rochester, before Mr. W. P. Haymen and other city justices, Messrs. Kellett & Bentley, of London, engineers, were summoned by John Spearman & Thomas Hulme, joiners, for 6*l.* 14*s.* 10*d.*, balance of 33*l.* 15*s.* 8*d.*, for work done under an agreement. Defendants are the contractors for the erection of the new pier at the Rochester Esplanade, and the complainants undertook to lay the flooring for them at so much per foot. The parties agreed as to measurement, and the complainants admitted that a few more bolts were required in their work, but there was a dispute as to whether or not, under their agreement (a verbal one), complainants ought to plane the flooring. Defendants maintained that they ought to, but complainants held the contrary, and their view seemed the more reasonable, as the amount of planing which might be required in such a case would be a very indefinite quantity, depending entirely on the evenness or otherwise of the timber with which the contractor chose to supply the joiners. The magistrates in the end ordered defendants to pay 6*l.* 4*s.* 10*d.*, and costs 15*s.* 6*d.*, deducting 10*s.* in respect of the bolts admitted to be wanting.

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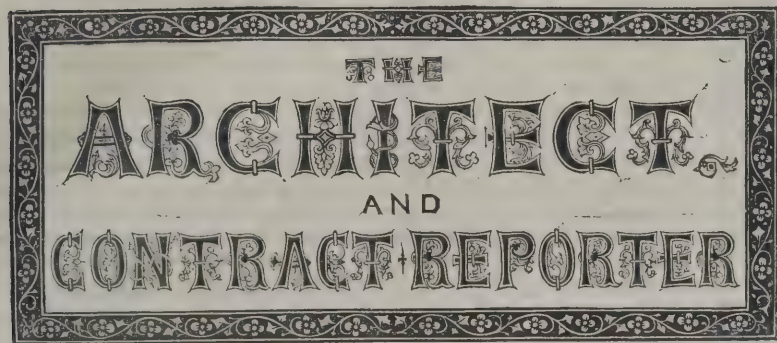


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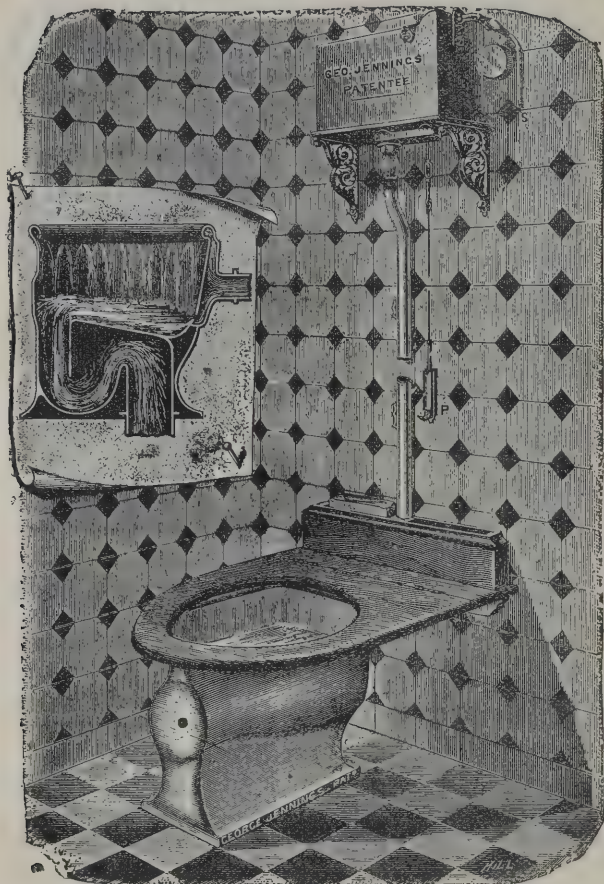
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# The Architect.

## THE WEEK.

M. EDOUARD CORROYER, architect of the works at Mont Saint-Michel, has been appointed the successor of the late M. BALLU, as inspector-general of diocesan edifices for that part of France which lies between Sens and Nantes in the north, and the Pyrenees and Mediterranean in the south.

ACCORDING to the return of Mr. APPELL, of the South Kensington Museum, there have issued during the past year 555 English and foreign works or publications relating to fine art, or of a kind that would be useful to art students. The South Kensington Art Library has obtained 454 of them. England stands at the head with 252 works, Germany has 146, France 126, Italy 19, and Sweden with Denmark 12.

BEFORE resigning office, Earl GRANVILLE nominated the members of the International Jury who are to represent England at the Amsterdam Exhibition. They are as follows:—Group 1, Education and Liberal Arts—Mr. E. W. GOSSE and Mr. HENRY SPICER; group 2, Furniture, &c.—Mr. J. S. TEMPLETON and Mr. T. C. MOORE; group 3, Textiles—Sir JOSEPH LEE and Mr. HENRY LEE; group 4, Minerals—Mr. BAUERMAN, Mr. GRIMSHAW, and Mr. W. J. BUSH; group 5, Mechanics—Captain DOUGLAS GALTON and Mr. W. ANDERSON; group 6, Food—Mr. WALTER LOW; group 7, Navigation—Mr. H. DUNLOP; group 9, Commerce—Mr. BATEMAN; section 4, Electricity—Captain ABNEY and Mr. W. H. PREECE.

AN official report on the exhibition which was held last year at Nice states that so far from proving an attraction to strangers, as had been hoped, it had on the contrary a deterrent effect. People do not come to Nice to visit international exhibitions, or to encounter crowds of sightseers, and the expectation that a rise in prices would ensue kept many away. The exhibition itself, though not especially remarkable, was rich in pottery ware of Vallauris and Mentone, and in Paris furniture and carriages. In the English section, Messrs. DOULTON exhibited a trophy of their ware as well as sanitary appliances, which were much appreciated and studied by the natives. In the gardens were pavilions containing the exhibits of the several municipalities of Nice, Cannes, Grasse, and Mentone, that of Nice being by far the most interesting for its collection of ancient inscriptions and prehistoric remains. Financially the exhibition was a failure. A sum of about 300,000 frs. was subscribed by the town, and as much or more by Monte Carlo, while 500,000 frs. was raised by means of shares. The letting of space to exhibitors, &c., probably raised the amount to 2,000,000 frs., while the total amount laid out is said to have exceeded 5,000,000 frs.; hence a lottery to the amount of 4,000,000 frs. has had to be resorted to to cover expenditure which is not yet drawn. Many of the small exhibitors failed to dispose of their wares, and were half ruined.

THERE are cases enough to show how little risk is incurred in slandering an architect; but when he holds a public office he has a chance of being placed on a footing with his fellow-citizens, and securing the protection of the law. The *John O'Groat Journal* in October last followed the example of many of its southern contemporaries, and edified the natives of the extreme north by publishing a letter, signed "Nemesis," which stated that Mr. BRIMS, an architect and Dean of Guild at Wick, was a dishonest person, who had prostituted his municipal appointment so as to benefit himself at the expense of the town of Wick; that he had dishonestly spent or caused to be spent public money, so as to improve and enhance in value the property belonging to himself as an individual, and so on. Mr. BRIMS took an action, and the defendants, among other pleas, said the statements were true, or were currently reported and believed by them to be absolutely true. The jury,

however, took a different view of the case, and on Tuesday last returned a verdict for Mr. BRIMS with 120*l.* damages. "Nemesis," like MINERVA at Troy, apparently gave support in order that punishment might come with more certainty.

The Porte Saint-Denis in Paris is completely surrounded with scaffolding of so elaborate a kind that it hardly seems to be intended for temporary use. But the work of restoration will occupy three years at least. The hoardings have been let for advertisements on the understanding that the space is available for that period. The area that can be covered with announcements is about 1,200 mètres.

A RELIQUARY of great antiquity and interest has been discovered in removing the surface stonework in the north wall of the sanctuary of the parish church of Folkestone. It evidently contains the remains of St. EAUSWIDE, or EAUSWITH, as she is now called, the patron saint of Folkestone, to whom the parish church is now dedicated. The reliquary is of lead, 15 inches in length by 12 inches in height and the same in width, and curiously marked with a zigzag pattern. Immediately above the place in the wall where it was inserted is a niche, where there has evidently been a shrine. The reliquary contains the skull and many of the bones in a fair state of preservation. It has evidently been opened and roughly treated, probably at the time of the Reformation, and then reinserted and built into the wall, and so covered as to have left no external mark of its whereabouts.

A DECISION which has been given in the Queen's Bench by Lord COLERIDGE and Mr. Justice MATHEW, gives a wide interpretation to the word "minerals," which so often occurs in conveyances. The Crown happens to be lord of the manor in Carnarvonshire, and has a claim on "all mines, minerals, ores, coal, limestone, and slate." The ordinary meaning attached to such words is that they refer to inorganic matter that is only obtainable at more or less depth below the ground. In one place, which was a piece of mountain land, the parishioners had rights of common, and sheep were allowed to graze on the short grass which grew on the granite. The granite had been also used to repair roads. But of late a company had endeavoured to turn the stone to better account as a building material, and had arranged with some of the parishioners for their rights. The Crown intervened, and the Court has given judgment. According to the decision, as there is nothing but granite in the place, unless granite is meant by minerals, there is nothing reserved, and the whole of the property would be given away without any consideration. Hereafter it will follow that "minerals" can be taken to mean the rocky stratum which, in course of time, is transformed into soil by atmospheric and other action, and in consequence more care than usual must be taken when drawing conveyances in which reservations are necessary.

THE changes in the nomenclature of the Paris streets are likely to be puzzling to a visitor. No street in the city was better known than the Rue Bonaparte, leading from the Quais to the Rue Vaugirard, for in it is the entrance to the Ecole des Beaux-Arts, and it is also a sort of Paternoster Row, as publishers of books on art and engravings have taken up their quarters there. Henceforth it is to bear the title of the Rue de Luxembourg. It is rather misleading as an indication of contiguity or direction, although less so than a similar title used to be when it was found on the street leading out of the Rue de Rivoli, and which is now known as the Rue Cambon. The Rue Bonaparte was constituted in 1852 by the unification of three separate streets. If an alteration must be made, one of those old names might be adopted, and so call the street Rue St.-Germain-des-Prés. But why not take a cue from the bust at the School, and call the street Rue Philibert de Lorme? Another change is the substitution of "Boulevard de la Convention" for "Boulevard Haussmann." It is to be hoped that the new title will be a sign of the approaching completion of the thoroughfare. Among the names which have been adopted for streets are those of BASTIEN LEPAGE and GUSTAVE DORÉ. The English philosophers CAVENDISH and PRIESTLY are also to be commemorated.



## A YEAR'S WORK OF THE SCIENCE AND ART DEPARTMENT.

THE importance of a Government office in this country is tested by a cash standard, and expenditure rather than utility determines its position. As the cost of the Science and Art Department for the year 1884-85 has been only 371,611*l.* 12*s.* 10*d.*, it would be vain to say that the work which has been executed can have the interest for the public which belongs to other departments of the State in which the outlay is to be counted by millions. The necessity for a national system of education in art and science is not yet self-evident in England, and the average taxpayer finds little comfort for himself should he chance to hear that 851,805 persons are being taught drawing, painting, or modelling through the agency of South Kensington, and that 78,336 students are attempting to cope with scientific difficulties. The statistical diagrams which indicate the growth of the schools by means of curves that run from the foot to the top of the page testify also to an ascent of altitudes in cost (although one may not correspond with its concurrent), and it is the latter—the black financial curve—which is certain to perplex our taxpayer.

The authorities of the Department naturally make the best of what they are doing, but in no other Government reports is so much to be found to suggest what has not been done. Publicity is a principle of the museum, and if a blunder has been made in a purchase, or if a false step has been taken, the country is not left in the dark. There are too many checks to allow of the suppression of defects. If South Kensington is the best abused of all the Government departments, it is owing, in a great measure, to that constant divulgence of information which HENRY COLE initiated.

We have lately called attention to the shortcomings of the Department teaching which were exposed before the Commission on Technical Education. In the reports of the science classes, where the tests are necessarily of a more precise kind than they can be for art, we can see a confirmation of what was then said. It is only here and there that we find evidence to suggest that the students are forming a more worthy notion of what they have to do, and that they will not allow themselves to be coached or crammed for the benefit of the teachers. Professor HUXLEY, who has shown himself to be hard to please, thinks that in his section "on the whole there is an improvement, inasmuch as gross blunders are fewer;" but he again condemns the drilling of a number of students in the hope that some of them may pass. In another section the cause of the failures is debited to the teachers. "The defective results," the examiners say, "cannot be ascribed to the want of intelligence in the candidates, but is due to shortcomings in the teaching. In fact, our results point to the conclusion that where want of intelligence is exhibited the cause must be sought, not in the minds of the taught, but in the methods of the teacher."

The examiners in the sections which have most right to be considered as technical or industrial are apparently the least satisfied. The defects in orthography, to which the examiner in mining alludes, might be overlooked, but when he describes the papers which were submitted in competition for "honours" as generally very imperfect, and showing a great want of practical knowledge, and that only six of the authors considered that even a general knowledge of mining was necessary, it is evident that in one part of the teaching at least a revolution is necessary. The examiner in geology believes it to be "very improbable that the pupils have much acquaintance with the things which they attempt to describe." In applied mechanics there is a similar haziness, for the "freehand sketches prove that there is no accurate knowledge of the construction or due proportion of parts in the particular thing described and sketched." The report on building construction is, we are glad to say, one of the least disheartening.

With regard to the art schools of the country, it is evident from the report of the examiners on the national competition works, which we published a fortnight ago, that either the schools are retrograding, or the theory of art which is held by the examiners is at variance with that of the Department. We read of slovenly execution, messy and woolly drawings, designs which are rank in colour, wanting in feeling, dignity

and sobriety, and stuffs which are offensively startling in colour. Praise is given for some classes of work, especially for examples from provincial schools, but on the whole there is more of fault finding. If in the highest class of work there is so much to be censured, what is to be said of the quality of the drawings which are produced by the majority of the eight hundred thousand students? The report of Mr. BARWELL on this point is not reassuring. To point out improvement in "certain large and very important places," he has to survey a period of no less than fifteen years. But in important centres he sees weary masters and schools languishing, and he cannot conceal from himself that too often the student is sacrificed to the needs of the master. "I am led to believe," he writes, "that a very great deal too much elementary outline from flat examples is carried over throughout. It is easier to teach, because it can be turned over to an assistant or pupil teacher. It leads to a definite pecuniary result in the second-grade examinations, and, with a large number, their ambition ends there, and the student is led to rest equally satisfied with the achievement." Mr. BARWELL has pointed out the great defect of the system which prevails in science no less than in art schools; but there is no possibility of its removal until the students recognise the fact that the best education is self-imparted, and that a teacher is only an auxiliary to remove difficulties.

The Committee of Council are able to record various gratifying events as having occurred in the South Kensington Museum in the course of the year. The Art Library has come into possession of the new rooms, and the gallery of casts from the antique was opened in August. From the report it would seem that the casts were primarily intended for the use of students, but it has been found that the public can take an interest in them. The acquisitions may not appear remarkable to a visitor, but over a thousand objects have been purchased at a cost of 16,514*l.* Among them are a massive gold Græco-Bactrian ornament, an unusually fine Persian carpet, and several examples from the Castellani collection. It is announced that a collection of about 1,200 specimens of English pottery and enamels will be presented by Lady SCHREIBER, and in that branch of industrial art the museum has not been rich. A new departure has been made by the appointment of a Committee of Taste, who will give advice on the acquirement of examples. Sir FREDERICK LEIGHTON is the chairman, and architecture is represented by Mr. BODLEY, A.R.A.

The amendment in the law of patents entailed an alteration in the status of the authorities with respect to the Patent Museum at South Kensington, which before then seemed to be independent of control. As a consequence several of the remarkable things which were to be seen in the shed have been returned to their owners. It is now stated that as soon as possible the entire collection will be removed to the western side of the Exhibition Road, in order that the whole of the scientific exhibits may be found together. Advantage should be taken of the change to overhaul the collection which is supposed by the authorities to represent building in this country, and which contains much that is obsolete and useless. There seems to have been no energy shown in securing examples which might make the collection correspond with its title. During the past year the expenditure on purchases has been only 22*l.* But while we are eager to see an adequate museum of building materials and models of construction at South Kensington, we must demur to the officers undertaking the duties of consulting architects. It is announced as part of the work of the year that "many inquiries as to sanitary goods and efficiency in drainage and ventilation have been replied to." Unless we are mistaken, the giving of advice of this kind is outside the province of the museum. There have been enough encroachments already on what should belong to architects at South Kensington, and the unoccupied time of the officers, although abundant, can no doubt be utilised in a less harmful and more becoming manner.

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The Bedford Urban Sanitary Authority have adopted nearly every one of the amendments proposed by the local architects and builders for the new building by-laws, and have made an urgent representation to the Local Government Board for their prompt sanction.



## NOTES ON SOME PROVINCIAL CHURCHES.

[BY A CORRESPONDENT.]

THE church at Axbridge, Somerset, is a fine and interesting building, picturesquely situated at the base of the Mendip Hills. It has, as far as funds permit, been restored under the direction of Mr. SEDDING. As regards the tile and marble pavements to the chancel, the design appears rather too rich for the church of such a small country town, with which it is scarcely in harmony. Much study has been bestowed on the new oak west door, which must have been a very expensive work. The design is original, without being out of character with the Mediæval surroundings. There is some artistic skill in the ornamental strap hinges, which bear the inscriptions, "JESUS our refuge" and "Through life into death." The idea of this for a west entrance—used for marriages, baptisms, funerals, and other special occasions—is appropriate. We want a little more poetical feeling in our churches—something to lift us out of to-day and the commonplace into a clearer atmosphere, and such a "departure" is always to be welcomed and encouraged. The door furniture also shows considerable fertility of design with its escutcheon, &c., and was clearly made for this church.

At St. Mary, Walton-by-Clevedon, is a rebuilt church attached to the ruin of the lower portion of an old tower. The modern building is a good and well-designed one in the Early Decorated style. But the coloured decoration to the waggon-headed chancel ceiling is crude and poor, and the figures indifferently done. The Te Deum is represented by angels enclosed in circular medallions, while seraphim and cherubim are depicted in the two bays over the sanctuary. The ground is blue, with the addition of gold stars to the ceiling over the sanctuary. At the upper part of the east wall is the Agnus Dei in the centre, over the triplet window, with three adoring angels on either side kneeling on steps, arranged over the arched head, the central lancet being higher than the side ones. This seems an appropriate treatment, not only from a constructional but from an artistic standpoint.

The old parish church of Clevedon, which now stands westwards of the large modern town, is quaintly situated on the slope of a hill rising towards the Bristol Channel. It has been externally a good deal tampered with, so that at the first blush the archæological student might fancy it was a pseudo-ancient building. A little closer examination, however, shows that it is a genuine cruciform church built in Norman times, the greater portion of the tower being of that date. There is a Decorated south aisle to the nave, a south transept of unusually great projection, as long as the chancel, with two arched and cusped recesses in its south wall, where there were formerly monumental effigies. This transept must evidently have been originally designed as a chantry chapel. The octagonal piers to the nave arcade do not possess any capitals, but the arch mouldings, consisting of two chamfered orders die, into them, the outer order being corbelled out north and south from the piers. The absence of the usual capital has been the reason of this peculiar arrangement. The discontinuous arches to piers in work of the Decorated period is rare, but that to the nave of Lostwithiel Church, of Early English date, has already been mentioned. As an occasional variation in a village church, this treatment is not unsuitable. But at the same time it must be conceded that the capital is a more finished and refined way of emphasising the division between the pier and the archivolt. There are some good old oak bench-ends in Clevedon Church, with poppy-heads. I must not omit also to mention the curious cross-shaped form in the Decorated tracery of the west window to the nave.

In the parish church of Dolgelly, North Wales, is one feature which, in my recollection, I have never seen before. It is not ancient, but the idea is good. In lieu of a memorial floor brass is a design in tiles, the same size as an ordinary brass, representing a floriated cross. Where the expense of a brass is an obstacle, this pleasing and in every way appropriate substitute for it is not to be despised.

The fine old church of Llanbadr-fawr, near Aberystwith, is an excellent type, though of rather a severe kind, of a large cruciform building with massive central tower. Like many Welsh churches, and others situated

in a district where freestone is scarce, it is almost destitute of buttresses. The style is Early English nearly throughout, with small lancet windows, except the east window, which, when I saw it, was much mutilated, as was also the south priest's door to the chancel. The tower has a plain parapet, with scant embrasures. There is a lofty south porch, with fine outer arch consisting of three chamfered orders. How well this simple style of moulding, if I may call a chamfer a moulding, suits a village church! The inner doorway of this porch is almost a transition between Norman and Early English, and its mouldings are of the bowtel kind. Its reparation has been carried out with most conservative ideas; the replacing of broken mutilated jamb mouldings does not afford much margin for going wrong. Now, I think nothing can better suit the locality and situation of this North Wales church, hard by the sea-coast, than its severity. It is plain, almost to meagreness. Would that we modern architects would more often take our model from such buildings as these, which look as if intended to last for ever! But, unluckily, as a matter of fact, these Mediæval buildings with thick walls and every appearance of substantiality have failed, for very simple reasons—the absence of that primary and most important consideration of all, a good foundation, proper bond to the walls, insufficient means of carrying off the rain-water from the roofs, the want of a damp-proof course, the absence of warming apparatus, the practice of keeping a damp church shut up all the week without ventilation, and the accumulation of earth day after day, month after month, year after year, century after century, from interments, dust, fallen leaves, &c.; also from want of proper drainage to the churchyards. In how many Mediæval churches has the architect who has had the good fortune to be entrusted with their repair, found that there were absolutely no footings whatever! Turning to the interior of Llandbadr-fawr church we find it ceiled in pitch pine, with good carved bosses, very much like a Somerset church. As architecturally the north and south transepts differ, so also do the ceilings. The cornices of both are of different design. The central tower is elegantly vaulted in wood, the angles being canted over at the same level as the other roofs. It was clearly never used as a lantern. There seems to have been no freestone employed internally for the very sufficient cause already mentioned. The arches and angles are square and plastered. As the windows are small and plain, the interior is extremely simple, reminding one of some of the Italian basilican churches, or those in the south of France. By means of colour it might be rendered most effective with its majestic scale and proportions, were it not for the serious objection of damp walls, a very usual defect in this part of the country. The corona lights to the nave are somewhat slight in substance and scarcely in suitable character (being rather too much ornamented) with the severity of the interior, which demands simple massiveness in all its fittings. It would have been better to employ some neutral tints and a little gilding, sparingly put on. I cannot say that I like the cathedral-rolled glass in the transept windows. It needs some clear, white glass mixed with it, and the tints are, moreover, too pronounced. Let rolled glass keep to its preserves and look like rolled glass, and not ape the deeper shades of painted glass. On this rock how often the ship of the architect gets wrecked! It is so easy to go wrong and out of the proper course. The suspicion of a shade will make all the difference in the good effect, as I have painfully learned by my own experience. Under the central tower is a representation on the pavement in the form of a Greek cross, composed of handsome Roman marble mosaic (*opus vermiculatum* or *incertum*), with an arrangement of encaustic glazed tiles at intervals. In the centre is the Lamb, encircled by the evangelistic symbols. Angels bearing musical instruments, the elders casting their crowns before the throne, are here represented, the whole composition being evidently founded on that sublime chapter iv. in the Apocalypse. I must make the same remark about this pavement that I made about the lighting arrangements—it is a little too rich and elaborate for the church. The chancel, when I saw it, was still unrestored. It must not be thought from the above gentle criticisms that the modern work to the building is faulty. Far from it. It displays great care and the exercise of much originality of imagination; but, at the



same time, the able architect under whose directions these works were effected seems to have a little overdone some of his beautiful and well-conceived detail, which would better suit a town church.

Though it is deeply to be regretted that a fine Mediæval parish church like that at Banbury should have been ruthlessly demolished some years since, yet the Renaissance church which has been reared in its stead has many points of interest. Externally it possesses no architectural pretensions, though the lofty tower, which is of large scale, is rather picturesque. The stone employed is of a warm-coloured reddish brown. But the interior, both owing to its composition and also to its coloured decoration, executed a few years since by Messrs. HEATON, BUTLER & BAYNE, under the superintendence of the architect, Mr. BLOMFIELD, is very impressive. In plan the nave is octagonal, with aisles, the perspective effect of the oblique sides of the octagon being peculiarly good. The ceiling over the central portion is in the form of a cupola, with a rather flat curve. The splendid vision of the Apocalypse is represented in the ceiling of the apse concha of the chancel. Here is Our LORD seated in majesty, with the blessed on either side, the evangelistic symbols, or the four living creatures, as the Revised Version terms them, at the base of the throne, with the incense ever burning before it. On the south wall archangels are depicted. Beneath are represented the Twelve Apostles, ranged in three panels of the apse, four in each compartment, all severally bearing their proper emblems. The effect is very good. Really, on first entering this building I was struck with amazement. I asked myself, "Am I in an English church?" For I could fancy that I had been transported into one of the great Renaissance churches of North Italy. Happily the whole of the ornamentation is perfectly suitable to the doctrine and ritual of the English communion. I therefore reckon my acquaintance with the interior of this structure as one of those delightful surprises in which some of the pleasure and happiness of life consists. The artists who had the management of the work are much to be congratulated on the result.

## THE SCIENCE AND PRACTICE OF VENTILATION.\*

By ROBERT BOYLE, Ventilating Engineer.

(Continued from page 363.)

THE subject of ventilation can never be placed on the most desirable footing till the architect shall always design in unison with its principles, and make them a "primary," instead of a mere secondary, consideration, in his structural arrangements. When this is not done, the means of effecting ventilation economically may too often be considered as superseded, before any attention has been paid to them. It is sometimes argued that ventilation is expensive, and that the cost is such as to preclude the general introduction of extended arrangements. Such reasoning has no force, unless received in connection with the special circumstances of each individual case. Systems of ventilation are often compared by parties who never take the trouble to inquire as to the amount of air which each may be capable of supplying for the sum expended upon it. If they did so, they would find that it is not at all necessary to adopt elaborate and expensive artificial appliances, when the same, if not better results, can be obtained by the use of much simpler and cheaper arrangements, and with which there is no trouble or after expense involved to keep them in operation.

It may be accepted as an axiom that even by the use of the best ventilating arrangements, we can only secure in our dwellings and public buildings air of a certain standard of impurity, as it is next to impossible to maintain the internal air in the same state of purity as the external. Another of the impossibilities connected with ventilation is that of satisfying every one; it cannot be done, and it would be useless to attempt it.

RICHARDSON says:—"To please all parties in the warming and ventilation of a public room is one of the most

difficult, if not really unattainable, tasks that can be imagined." When Dr. REID had completed the application of his system of ventilation to the House of Commons, in relating his experience of how it was appreciated, he states that "the first remark made after the House met was, 'The temperature is rising, we shall be suffocated immediately.' This was addressed to me by a member walking from the bar to the door, and he had no sooner passed than another followed him, hurriedly stating as he passed, 'I am shivering with cold, I can bear this House no longer.' . . . I have repeatedly during this very session been present in the House of Peers when members have left it, some because it was too hot, and some because it was too cold, at the same moment. . . . I have been quite at a loss how to proceed, from the great diversity of opinion entertained by different members." Dr. REID's experience may be taken as the experience of all who have attempted the ventilation of public buildings, and it will always be so, so long as human nature remains as it is.

It is much to be deplored that the interest awakened in sanitary matters has given birth to a set of unscrupulous persons, who, pirating sanitary inventions of established worth, attempt to palm inferior and cheaply got-up imitations upon the public, the failures of which tend greatly to bring discredit upon useful and genuine inventions, and to inspire distrust in the public mind with respect to sanitary and ventilating appliances in general.

These imitations are, as a rule, purposely "got up" to resemble as nearly as possible in external appearance the article imitated, with the intention of leading intending purchasers to suppose that they are getting the same thing at a cheaper price, whereas there is in reality the greatest difference in the world between the action of the one and the other, as the unlucky purchaser of them very soon finds out to his cost.

The host of nondescripts who now dub themselves "ventilating and sanitary engineers," is, it is much to be regretted, steadily on the increase. These people do an incalculable amount of harm to the cause of sanitary science, owing to their extreme ignorance of the subject they pretend to be "professors" of, as, unfortunately, there are always some people to be found who allow themselves to be taken in by specious pretensions. These individuals as a rule hold out the alluring bait of "cheapness" to entrap the unwary, who find out, however, all too soon that what they had so confidently thought "cheap" would be dear at any price. This discovery is of course all the more mortifying when they afterwards find that they could have obtained genuine and efficient appliances and the best skilled advice and labour at the same, or for even a less, sum than what they had paid. These "practitioners" rely upon the fairly safe chance that the majority of intending purchasers may not have either the opportunity or the inclination to compare prices.

There is no royal road to the attainment of a knowledge of sanitary science, as, like all other sciences, it necessitates many years of careful study and practical research before even an ordinary degree of proficiency can be attained. It is, therefore, unreasonable to suppose that any person having only the most meagre and superficial acquaintance with ventilating appliances—obtained, perhaps, through acting as an agent for the sale of ventilators, or as a traveller canvassing for orders—can when he chooses, and on the strength of such knowledge, transform himself into a duly qualified ventilating and sanitary engineer, without first having undergone that extended scientific and technical training which is as essential for his success as it is for a medical man to devote several years to the probationary study of medicine before he begins to practice it. DE CHAUMONT will be found to be correct when he says:—"The greatest engineering skill is necessary in the arrangement of tubes, the supply of fresh air," &c.

The mere application of a ventilator to a building by an unqualified person, no matter how good the ventilator may be, will no more secure efficient ventilation than putting a steam boiler into the charge of a person ignorant of its management will set the machinery in effective motion. The ventilator and the boiler are good and useful in themselves, but to secure the full amount of benefit from them it is absolutely essential they should be applied by some one skilled in their adaptation to the requirements of the case,



otherwise failure to achieve what is desired will inevitably ensue.

Ventilators should never be purchased and stuck on to a building at hap-hazard. This is the cause of the many failures to secure ventilation where they have been so applied. A properly qualified ventilating engineer should be consulted as to the size, number, and positions of both outlets and inlets. This advice may generally be had from a respectable firm for the trouble of asking, and if acted upon would save what otherwise might prove a useless expenditure of money, and at the same time insure satisfactory results.

It should always be borne in mind that so-called "cheapness" is a snare in matters of ventilation, as it is not the amount expended that should be considered, but the results which are obtained for such expenditure.

The lessons intended to be conveyed by the foregoing remarks may be briefly summarised as follows:—

1. Pure air in our dwellings and public edifices is absolutely necessary for the preservation and maintenance of health.

2. In changing the air of a room the vitiated air should always be extracted from the highest point, and fresh air admitted in a vertical direction above the level of the head.

3. In a large room or hall the vitiated air should be withdrawn through several openings in the ceiling in preference to one or two, to facilitate and equalise the quantity of air extracted from the different parts of the room.

4. The supply of fresh air should be subdivided as much as possible, and introduced at a low velocity through a number of small openings or vertical tubes placed round the room, to insure thorough diffusion and prevent draughts.

5. Air should never be artificially forced into a building, as the inevitable result is defective ventilation and disagreeable and dangerous draughts, even though the air be warmed. "Rude and local currents, whether cold or hot, always indicate imperfections which should be banished" (REID).

6. If artificial means are employed, it should only be for the *extraction* of air, never for the admission, for the reasons stated above.

7. When possible, the air supply should be warmed in cold weather by some simple means, such as the arrangement described.

8. All mechanical or artificial modes of ventilation, such as fans, water motors, or heat, are, for all ordinary purposes, not to be recommended, as being unnecessary, costly, unsatisfactory in action, liable to get out of order and break down, and apt to be neglected by those appointed to look after them, when the ventilation is rendered irregular or brought to a standstill.

9. Where heat is employed as the ventilating medium it is essential, to permit of its proper action, that the pressure of the external atmosphere, especially in cold weather, be removed from the top of the upcast shaft. This can only be effected by the use of extracting ventilators of proper construction, the "louvre" arrangement usually employed being invariably found to impede the up-draught and create down-draught.

10. Any arrangement which artificially saturates the air supply with moisture, and renders it damper than what in this climate is its normal state, should be avoided as pernicious in principle, dangerous to health, and destructive of comfort.

11. Automatic or natural ventilation is the best, the least expensive, and the easiest of application and control. "In temperate climates, in most cases, natural ventilation is the best" (PARKES).

12. Revolving ventilators are not to be recommended, as they are unsightly, liable to get out of order, make a noise, and frequently act the wrong way.

13. Fixed ventilators are the best, as they can be made to harmonise with every style of architecture, cannot get out of order, and require no attention.

14. The extracting power of a roof ventilator lies exclusively in its head, and is regulated by the size of the same, and not by the diameter of the shaft attached to it, which in no way assists the action of the ventilator as an exhausting medium.

15. Open pipes, or pipes merely covered with a cap, are not to be relied upon as foul-air extractors, as wherever they

have been used for the purposes of ventilation a down-draught of cold air has always been found to result.

16. It should be borne in mind that the subject of ventilation is one of the most complex and difficult that is in existence, and can only be successfully dealt with by those who have made it their special study for many years. "The greatest engineering skill is necessary in the arrangement of tubes, the supply of fresh air, &c." (DE CHAUMONT).

17. Ventilators should never be applied to a building at hap-hazard, as failure is the inevitable result. They should only be applied under the advice of a competent ventilating engineer, which advice can generally be had for the asking.

## TESSERÆ.

Sir Joshua Reynolds.

SIR M. A. SHEE, P.R.A.

THE more we study the works of Reynolds the more we find reason to admire the variety of merits which they display. In colouring he has often equalled the best productions of Titian; he has sometimes surpassed them. The author knows what he risks by this assertion, but it is time to speak out and do justice to the genius of our country. To Titian, as to the great and long-established model of truth and purity in colouring, every scientific eye must look with admiration and respect; but the author confesses that he has not been able to discover, even in the most celebrated productions of the Venetian school, an example of excellence in this department of art, which would not, at present, suffer in comparison with some of the finest specimens of Reynolds. In the management of light and shade, he unites to the vigour and science of Rembrandt the delicacy and breadth of Correggio. In character and expression, he presents the truth of sentiment and action, without swell or exaggeration. His dignity is never the strut of the stage, nor his passion the struggle of grimace. In taste, that peculiar power of the artist which "turns the happiest attitude of things," he is absolutely without a rival in modern times. In spirit and facility of execution, and in all those merits of mechanism, material, and surface, which appear to be as much over-rated in our school as they are under-rated in the schools of the Continent, he has never been surpassed. In composition, indeed, though often successful, he cannot be said to be eminently skilled; and in design he is confessedly deficient. This latter defect, however, he manages with so much judgment, that his incorrectness seems more the result of negligence than inability. He, at least, indicates what he fails to express; and, as he never suffers the awkwardness of unsuccessful effort to appear, his academic deficiencies are hardly noticed amongst such varied accompaniments of acknowledged excellence.

## Copying by Greek Sculptors.

W. W. STORY.

Had the Greeks understood the modern process of casting in plaster from the clay, or from a statue, they could, from the cast, have multiplied in marble the same statue any number of times identically, or with such minute differences as few eyes could perceive. The *repliche* in a modern sculptor's studio are scarcely to be distinguished from each other, and there would have been no difficulty in doing the same thing in an ancient sculptor's studio. What is the fact known? So far from this being the case, not only are there comparatively very few *repliche* even of the most famous statues, for which there would necessarily be a great demand, but even in the various *repliche* which we have there are not only no two which approach to identity either in attitude or size, but one can scarcely say in any one of them that the artist had more at best than a vivid recollection of the original, or of some other replica, much less that he had it before him to copy even by eye. Often the attitude is changed as well as the size and proportions; sometimes the action is reversed, and in all cases such differences exist as it is impossible that the clumsiest workman could have made with a cast of the original before him. Nor do we read or hear of any copies in our sense of copy, that is, exact reproduction of any of the great works of the great sculptors. Look, for instance, at the *Venus* of the Capitol, and the *Venus de Medici*, and the St. Petersburg *Venus*. They are all *repliche* of the renowned statue by Praxiteles; but, beyond the general attitude, there is no resemblance, not so much as any clever artist of to-day could make from mere recollection. Look, again, at the portrait busts? How many are there of Marcus Aurelius, Octavius Cæsar, and Lucius Verus, and no two of them approaching identity? Of the thousands of statues which have been excavated, no two are exact copies from the same model. There is at best nothing more than a family resemblance among those which are most alike.



Would this be possible if the ancients knew and practised the art of casting in plaster as we do? It would seem to be utterly impossible, or at least improbable to the highest degree.

#### English Indifference to Greek Work.

E. J. POYNTER, R.A.

I the more regret the decline of the taste for antique art in England, because so many of the beautiful works collected up to fifty years ago by cultivated men are leaving the country, and none seem to be entering it. The French have replaced us in that respect, while our collectors of the present day devote themselves to blue china—a taste, it is true, which requires no education. Of all the hundreds of the exquisite little terra-cotta figures from Tanagra which have been discovered within the last ten or twelve years, not a dozen, I believe, have found their way into private collections in this country; there are a few in the British Museum. The French have the good taste to buy them all. I do not imagine that the best of these exquisite works, the purest expression of the Greek artistic instinct, ever rose in price to that of a “hawthorn” jar at Christie’s; and yet there is more art in the little finger of the man who made one of those figures than in the whole Chinese nation.

#### Landscape Painting.

HARTLEY COLERIDGE.

Every painted landscape, if it possesses the unity essential to a work of art, must make a whole of what in Nature is felt and understood to be but a part—perhaps a part as unconsidered, if not as prominent, as the nose on the face. In Nature we are glad to merge our human individuality in the universal, while in art we demand that everything should be humanised, and refer to man as its centre and solution. We require a meaning, a purpose in every line, and light and shade. I think sylvan scenery paints the best of any. In glades and copses the eye is confined to a small indefinite space, and to a few picturesque objects, which fancy can multiply and vary as it chooses. The effects of light and shadow are strongly marked, and within the reach of imitation. The distance seen through vistas of trees, or peeping between the branches, affords a most intelligible perspective. A wood is a sort of natural diorama. Trees, too, are individuals, and, being liable to the operations of time, have a poetical sympathy with human life, which, in lakes and mountains, can hardly be imagined. Scenes again over which a human interest presides, where the steep is crowned with castle or convent, and the long aqueduct stretches across the vale, and towers, domes, minarets, loom in the distance, and the foreground is strewn with broken columns and marble fountains, which Nature has taken to herself again, do very well. But where Nature reigns alone, and man only appears to show his insignificance, where every portion derives its beauty from the co-presence and co-inherence of the whole, art can do little more than hint at what it cannot do, and present a humble index or chapter of contents to the volume, which can neither be translated nor transcribed.

#### Architectural Proportion.

PROFESSOR COCKERELL, R.A.

Vitruvius (lib. vi. c. 2, 3, 4, 6; lib. v. c. 1, and c. 2) gives us the experience of the ancients on this important subject. The Greek forum, says he, was a square, but the Roman was 3 by 2, because the gladiatorial shows were exhibited there; courts should have the proportions of 5 by 3 (the favourite of the learned Palladio), sometimes 3 by 2, or sesquilateral, or the diagonal of the square will be the length. He lays down the proportions of all the apartments of the Greek and Roman house: atria, alæ, tablinum, and peristylum, triclinia, cæci, exedrae et pinacothecæ. He does not, however, establish any principle, and his rules are wholly empirical. But the great Alberti, not content without a principle, adopts the Pythagorean doctrine of universal harmony, and agreement between sounds and numbers, namely, that what pleases the ear pleases also the eye. He lays down, therefore, his harmonic proportion, in which Blondel, Ouvrard, and others have followed. The notion of musical proportions is common, and has occupied many ingenious minds already versed in that art. Describing St. Peter’s, Byron in this feeling observes:—

Vastness which grows, but grows to *harmonise*,  
All musical in its immensities.

Alberti was the first also to establish the rules of arithmetical and geometrical proportions (lib. ix. c. 3, 4, 5, 6), applied to all the varieties of areas and capacities. He is followed by Palladio in the arithmetical and geometrical rules (lib. i. c. 23). It is a comfortable conclusion to the practical architect that the empirical rules of Vitruvius, the harmonic, the geometrical, and arithmetical rules of Alberti and his followers, agree in the main; so that either may be adopted without material deviation from correctness; but the neglect of these rules, in which lie that hidden charm that everyone must be sensible of when examining a finely proportioned room, has been common of late

years, as if the principle were of no value. The zealous student, therefore, should carefully note that consent of the ancients and the most illustrious masters of the moderns here set forth; and he will soon learn devoutly to repeat the denunciation of the Hindu Vitruvius (Ram Raz, Asiatic Society, 1834, p. 15), “Woe to them who dwell in a house not built according to the proportions of symmetry.”

#### Manx Crosses.

J. G. CUMMING.

The Danes and Northmen occupied the Isle of Man from the beginning of the tenth to the latter part of the thirteenth century, and the memorials of their occupation are distinct and numerous, both in the social institutions of the island, in the names of hills, rivers, &c., and especially in the Runic crosses, which in the northern part of the island are so numerous that in a mountainous area of sixteen miles by ten no less than twenty-nine different examples are to be found. Many of them have inscriptions in Runic characters and in Icelandic, the ancient Scandinavian tongue. The close connection between the Northmen in Ireland and their countrymen in Man serves to explain the similarity of the crosses found in each island, and their resemblance to those in the Western Highlands and Scottish Islands is explained in the same manner; but the Manx crosses are distinguished by local peculiarities indicating a less advanced state in the art of ornament. The various animals, weapons, &c., which are found on them have no object probably beyond ornament, as they are often employed as terminal ornaments alone, the cock being a favourite bird for the last purpose. In all cases the cross has a circle, or glory, more or less indicated upon it, and the Runic inscription is written on the edge from the ground upwards. Many crosses have been recklessly destroyed, and many of those discovered owe their preservation to having been built into the old parish churches, and brought to light only when the latter were pulled down to be rebuilt, between the years 1825 and 1835.

#### The Roman Corinthian.

W. H. LEEDS.

That what the Romans made of this order is not to be judged of by the comparatively few examples of it to be gathered in still existing buildings, is tolerably apparent from the innumerable fragmentary specimens of it which are to be met with scattered through different museums and repositories of works of art, each of which is distinguished by some peculiarity. How many others have totally perished it is impossible to say; but when the Solomon of the West, the magnificent Abderahman III., erected his palace at Zahra, near Cordova, he collected for its embellishment no fewer than 4,300 Roman columns, the greater part of which were obtained from Africa, a considerable number from other parts of Spain, 146 from Constantinople, and not a few from Rome itself. To columns plundered from Roman edifices, not a few Mediæval buildings in the south of Europe were indebted for a species of magnificence that, in many instances, contrasted very forcibly with the rudeness and poverty of the rest of the architecture, and, although only fragments from a large wreck, such transplanted columns afford tolerably plain evidence that the Roman understood how to impart great diversity of character to what conformed to the same generic type.

#### Ancient Egyptian Furniture.

SAMUEL BIRCH, LL.D.

The furniture of the ancient Egyptians consisted principally of rich beds, or couches with their beds, or mattresses, pillows, and cushions, and wooden head-rests, footstool-stands, tables and chairs, both with high and low backs; or folding-stools, like the Greek *okladias*, boxes for holding clothes and other objects. From the earliest period high-backed and other chairs were in use, and at the time of the eighteenth and nineteenth dynasties were imported as tribute from Ethiopia. Pillows of stone, wood, and other objects were also of great antiquity, and are represented in coffins of the sixth and following dynasties. They exhibit a great variety of shape, consisting of a curved semi-elliptical portion, adapted to hold the back of the head, supported by a column or other contrivance resting on a base or pedestal. For furniture various woods were employed; ebony, acacia, or santon cedar, sycamore, and others of species not determined; ivory, both of the hippopotamus and elephant, was used for inlaying, as also were glass pastes, and specimens of marquetry are not uncommon. In the paintings in the tombs gorgeous pieces of gilded furniture are depicted. For cushions and mattresses, linen cloth, feathers of the water-fowl, and coloured stuffs appear to have been used, while seats have plaited bottoms of linen cord, or tanned and dyed leather thrown over them. Sometimes the skins of panthers were used for the purpose. On the whole, an Egyptian house was lightly furnished, and not encumbered with so many articles as are in use at the present day. For carpets they used mats of palm fibre, on which they often sat.













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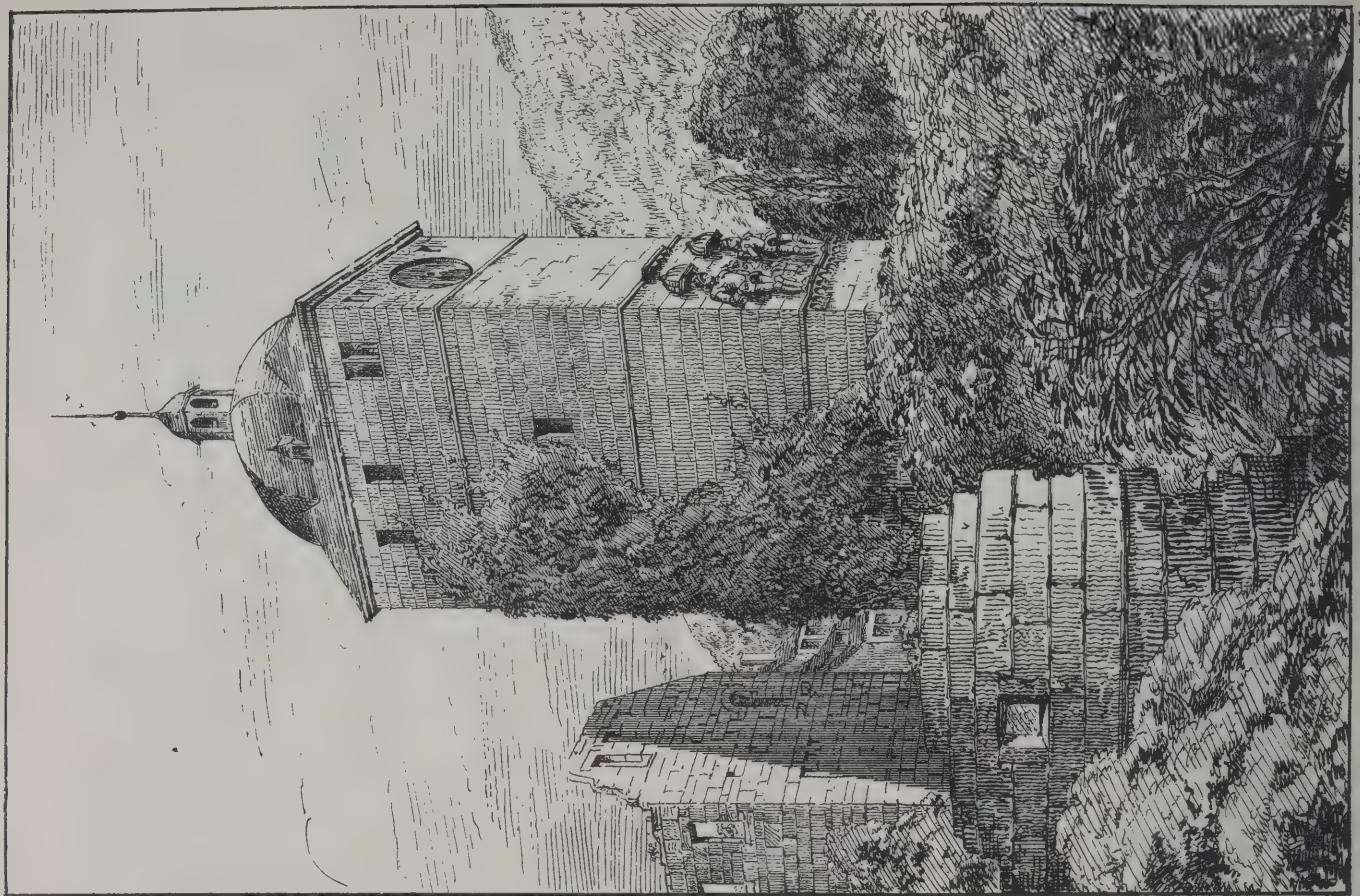












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A SKETCH IN HEIDELBERG.  
BY RICHARD ROWE, ARCHT.



"LA GROSSE HORLOGE," ROUEN.  
DRAWN BY CHARLES STEWARD SMITH.









**New Church.**  
CHORLEY AND CONNOR.  
ARCHITECTS.  
15, PARK ROW, LEEDS.





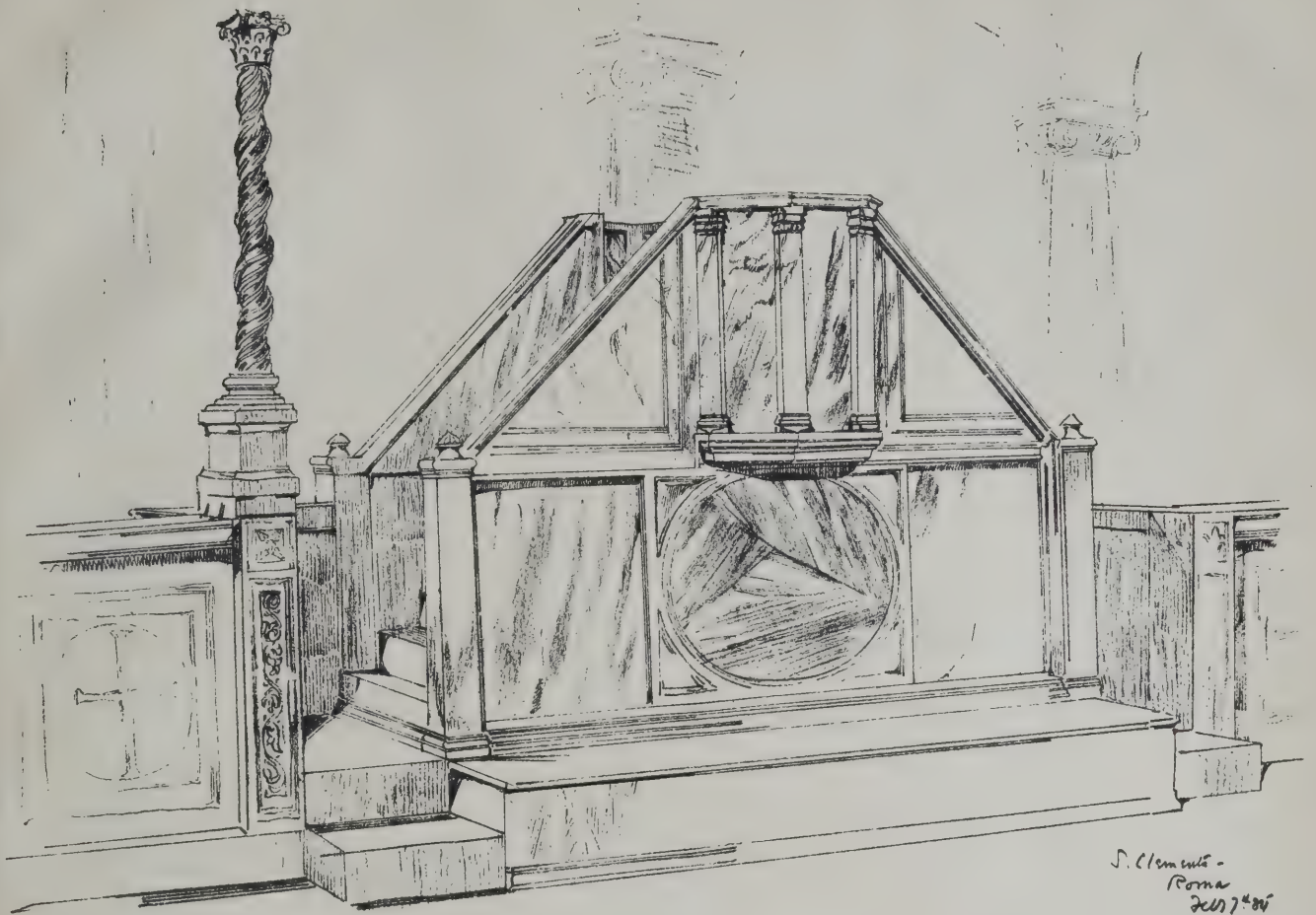
Arch. Photo. Sprague & Co. London E.C.

SUN FIRE & LIFE OFFICES, ST. ANDREW ST., DUBLIN.  
 [HEAD OFFICE FOR IRELAND]  
 G.C. ASHLIN, A.R.H.A. ARCHITECT.









S. Clemente -  
Rome - July 1884 -









## ILLUSTRATIONS.

THE ARTS: THE ARCHITECT.

THIS illustration is the sixth and final of the series by M. EHLMANN.

CHURCH, WELLESLEY ROAD, CROYDON.

THIS building is designed after the manner of a college hall rather than on a strictly ecclesiastical basis. The interior is small, and has been treated especially with a view to the comfort of those attending the services. The seats are of a novel and improved form, the walls are panelled to a height of about 10 feet, and the ceiling is nearly flat, with moulded ribs dividing it into panels. Externally the whole of the work is executed in Bath stone, and the character of it is sufficiently shown in the view. The architects were Messrs. CHORLEY & CONNOR, of 15 Park Row, Leeds.

SUN FIRE AND LIFE OFFICE, ST. ANDREW STREET, DUBLIN.

THIS building is now in course of erection for Messrs. O'DONELL & FITZGERALD, stockbrokers, and occupies a corner site near the centre of the city. The stock-broking offices and insurance office are on the ground-floor, and the remainder of the building is in suites of offices. The frontage to the street is 80 feet, and the height to the finial of angle turret 88 feet. The facing of ground storey is of chiselled granite, and of the upper portion of red Kingscourt bricks, the dressings of windows, &c., being of Portland and Bath stone. The roof will be covered with Westmoreland green slates, and the joinery throughout is in pitch pine, with which material the ceilings of ground-floor offices will be panelled. The entire work is being carried out by Messrs. MEADE & SON, builders, of Dublin, under the superintendence of the architect, Mr. G. C. ASHLIN, R.H.A., at a cost of 5,086l.

The illustration is a reproduction of a coloured drawing which was exhibited at the Royal Hibernian Academy.

PULPITS IN ST. CLEMENT'S, ROME.

THE church of St. Clement was always considered to be extremely interesting as a record of primitive ecclesiastical arrangements. But the discovery of the subterranean crypt, with its frescoes, has to some extent superseded the importance of the upper building. The two marble ambones, or pulpits, which Mr. BARRATT has sketched, are supposed to date from the ninth century. One was used for the reading of the epistle for the day by a subdeacon, the second for the reading of the gospel by a deacon. The twisted column supported the Paschal candle.

LA GROSSE HORLOGE, ROUEN.

THIS sketch is by Mr. C. S. STEWART, of Reading.

SKETCH IN NUREMBERG.

THIS sketch is by Mr. R. M. ROE, of London.

## ART SCHOOLS.

AMONG the reports of the inspectors to the Science and Art Department, Mr. Barwell reports as follows:—

Of the varied duties that fall to the lot of the inspectors, only such as relate to actual inspection need here be referred to, nor am I able to give any valuable opinion on the teaching in the science section, except perhaps to remark that machine drawing has very much disappeared from certain schools of art where it once largely flourished. I have been informed that highly finished work of the kind is greatly superseded by the photograph, and hence a decreased demand for the skilled draughtsman.

Schools of art are increasing steadily in number. Some, however, are so small and insignificant that they are only kept alive by the higher fees received from the amateur morning classes, chiefly attended by ladies, and where a very poor kind of art, if art it can be called, is aimed at. Indeed, the latter remark holds good of similar classes in many schools of an

otherwise better kind, and it requires either a good tradition or a very firm and able master to get higher effort from the mere amateur at a school of art. I do not advocate their exclusion; on the contrary. But if they are admitted, they should be bound to undertake serious work. Turning to the industrial student, I am led to believe that a very great deal too much elementary outline from flat examples is carried on throughout. It is easier to teach, because it can be turned over to an assistant or pupil teacher. It leads to a definite pecuniary result in the second-grade examinations, and with a large number of teachers their ambition ends there, and the student is led to rest equally satisfied with the achievement. Many of the elementary casts are not at all more difficult to outline from than a flat copy, and a judicious teacher could soon lead the more intelligent on to light and shade by taking cast shadows alone at first, and when that has been acquired proceed to the more important half tones. The otherwise ugly German elementary casts are admirably adapted for this purpose. Success on the student's part rests indeed with the teachers, and if we want to get good work out of the former we must hammer away at the latter and teach them to teach.

A few schools of art in important centres still languish in the hands of inefficient masters who received their training many years ago, and who, besides lack of better knowledge and system, have grown weary of their work, yet cannot afford to resign; their committees, too, are naturally loth to turn them adrift or are ignorant of their incapacity.

One frequent drawback is the want of better accommodation, a need gradually recognised in the larger towns, and each year there is improvement in this respect. Pictorial art is the goal of a certain number of students in every large and in many smaller schools; nor do I see how this can be prevented, as a good art education for the decorator will go a long way towards the training of a painter. Indeed the latter would profit by the more extended range of the former, if the decorator's art be taken in a large sense.

Premising that a vast amount of ornament finds its proper place as enrichment of structure, I think the study of architecture is not sufficiently carried on and encouraged in schools of art. A knowledge of orders, mouldings, and proportions, and a general acquaintance with the various styles so useful in many handicrafts, requires more attention than it gets, except in one or two localities. Looking back upon the work done in the schools of art for the last fifteen years, I am of opinion that in certain large and very important places a decided improvement has taken place. As to the smaller centres, if they be lucky enough to pitch upon a good teacher they do well enough. Unfortunately for them the best trained and ablest masters naturally gravitate to the big places, and if none such require their services they paint for exhibitions or teach privately, and the smaller localities must content themselves with what they can get out of the art night classes. Where classes have been established by the teachers, and gentlemen have been induced to act on the committee by the promise that they shall have no trouble, the latter are apt to pay too little attention to the undertaking which they sign to visit the classes and see that all goes on regularly. Where gentlemen interested in education have taken the initiative, rules and regulations are better observed.

## THE ARCHÆOLOGICAL CONGRESS AT DERBY.

THE Royal Archæological Institute has definitely fixed the last week in July and the first in August for this year's Congress, which is to be held at Derby, under the presidency of Lord Carnarvon. Among the patrons of the congress are the Dukes of Norfolk, Rutland, and Devonshire, the Bishops of Lichfield and Southwell, Lords Hartington, Vernon, and Scarsdale, and Bishop Abraham. Mr. Beresford-Hope, M.P., will preside over the architectural section, the Dean of Lichfield over the historical, and the Rev. Dr. Cox over the antiquarian. On Tuesday, July 28, the members of the Institute will be publicly received by the Mayor and Corporation of Derby, and by the local archæological and natural history society; and in the afternoon Kedleston Church and Hall will be visited. Wednesday, the 29th, will be devoted to Norbury House, Ashbourne, and Tutbury Castle, church, and earthworks; Thursday, to Chesterfield and Hardwicke Hall; Friday, to Bakewell, Had-don Hall, and Yougholgreave Church; and Saturday, to Dale Abbey, Sawley, Breadsall, and Morley. On Monday, August 3, an excursion will be made to Repton, with its church, school, and priory, as well as to Breedon Priory and Melbourne Church. On Tuesday, the 4th, the party will go by railway to Chapel-en-le-Frith, and drive thence to Castleton, Peak Castle, and Tideswell. On Wednesday, the 5th, they will go by rail to Hassop, from which place they will drive to Padley, Carls Wark, and Hathersage. A temporary museum will be opened at the Free Library, Derby, rooms in which will be placed every evening at



the disposal of the sectional meetings. On the evening of Thursday, the 30th, there will be a conversazione, given by Lord Percy and the other members of the Council, at the Free Library, for which a large number of invitations will be issued to the gentry of the neighbourhood. The Mayor of Derby has undertaken the office of chairman of the local committee, and the excursion arrangements will be under the management of the secretaries of the Institute, Messrs. Hellier Gosselin and St. John Hope.

### THE ROMAN GHETTO.

THE demolition of the oldest Jewish quarter in Europe, dating, it is said, from before Cæsar's time, is proceeding rapidly. The archaeological commission which is charged with the exploration and protection of ancient monuments has applied to the Italian Government that measures shall be taken for clearing the temple of Jupiter and the portico of Octavia from the buildings which have grown up around them, and also for putting them in such a state of repair as is necessary for their preservation. The commission also requests that the new streets which are to be laid down over the cleared area shall be so planned that their points of intersection shall coincide with the following ancient buildings, which are now within the Ghetto:—The theatre of Marcellus, the crypt of the Emperor Balbus, and the porticoes of the Flavian emperors and of the Emperor Philip. There is a supplementary request that these buildings shall be placed on the list of ancient monuments, for the preservation of which a small contribution is annually made by the State.

### DEVONSHIRE ARTISTS.

AN exhibition of the works of Devonshire artists will shortly be held in Exeter. It is surprising to find how large a number of artists the county has produced, for while Middlesex, including the whole of London, of course, heads the list with one hundred and sixty-six native-born artists, Devonshire comes next with thirty-three—more by eleven than the two counties next in order, namely, York and Somerset. It should, however, be explained, says the *Exeter and Plymouth Gazette*, that these numbers represent only that small number of artists whose birthplace Redgrave, in his "English School of Painting," had been able definitely to trace, and it may well be that our county has produced many more artists of some, if not of considerable note. And, indeed, Mr. Pycroft's little volume contains the names of no less than sixty-five artists claiming Devonshire as their birthplace, and this does not include several artists whose work, though sufficiently well known in their own immediate neighbourhood, has not acquired any extended recognition.

The committee of the Art Exhibition determined some time ago to get together as far as possible a collection of pictures illustrative of the styles of the various artists whom the county has produced, but it was felt that so far as the living artists were concerned, they might be trusted to aid the committee by themselves taking care to be represented. It was therefore necessary only to consider how examples of the work of deceased Devonians were to be obtained, and to draw up a list of those who should be represented. Mr. Pycroft's list enumerated forty-nine, and it was felt undesirable to add many names to his list, as he had with great discrimination selected those worthy of being held in remembrance. It is gratifying to learn that examples of the work of nearly all the painters included in this list have been obtained by the exertions of the committee, and that a collection of great local interest will soon be open to the inspection of the public. These pictures have been collected from many of the best galleries in the county, and the owners have in the most liberal manner placed their works of art at the entire disposal of the committee. We hope before long to present our readers with a preliminary notice of the numerous pictures which have been promised for the exhibition; now we have space only to mention certain *desiderata*, which we fear the committee will have some difficulty in obtaining. And first on the list is John Shute, a celebrated miniature painter, who died in 1563, and of whose works nothing but the remembrance seems to remain. Then it seems no examples of Francis Hayman's work have so far been obtained, though he was a well-known artist in London in the time of Hogarth, and continued to paint historical pictures until his death in 1776. Nor has anything by Thomas Jenkins, who died in 1798, been obtained, though he was an artist of some talent, and a pupil of Hudson. R. Davey, the portrait painter, who died in 1793, and Ozias Humphry, the miniature painter and Academician, are also so far unrepresented, as are W. Score, J. Cranch, and T. W. Upham. Two less well-known artists, J. F. Stevens and Dorothea Knighton, are also without examples, as are John Ponsford, J. P. Davis, W. Salter, and H. Hainsellin. The younger Condy (N. M.) is so far represented only by a series of very charming but small water-colour

drawings, which were originally the property of Lord Egremont. All the other artists in Mr. Pycroft's list, as well as some others, such as F. Towne and the late Mr. Jeffreys, are, we believe, represented by more or less perfect examples, and we trust that, before the opening of the exhibition, not a few of these also will have been added to the list.

### THE EDINBURGH CROSS.

THE restoration of the Edinburgh Mercat Cross is to be begun immediately as the plans have received the sanction of the Town Council. The preparation of the designs was committed by Mr. Gladstone to Mr. Sydney Mitchell, who has consulted the most authentic drawings and details extant. Mr. Mitchell's designs of the old cross show a structure quaint and picturesque in appearance. The lower part of the edifice is, as nearly as possible, a restoration of the cross of 1617. The previous structure, of which no drawings exist, had been taken down by the magistrates of the period, with the view of widening the High Street, on the occasion of King James VI.'s visit to his native country, and the 1617 cross was erected in its stead. It is an octagon, about 16 feet in diameter and 15 feet high to the top of the parapet. At the angles of the octagon are eight Ionic columns, and from their eight capitals, eight bastions or rounded turrets are corbelled out. In the curtains or flat spaces of the parapet, between the bastions, are eight medallions—that over the doorway containing the town's arms, which will be copied from the original medallion at Abbotsford. On the other medallions in the old cross were heads in relief, of more ancient workmanship than the rest of the edifice. Four of these passed into the possession of Sir Walter Scott, and were built into the garden wall at Abbotsford. It would appear that the present proprietors of this classic mansion do not see their way to part with the old medallions. In the absence of the originals it is not intended to reproduce the heads, which are of mythical personages, and of little artistic merit. Had they been obtainable they would have been historically interesting as a connecting link between the restored and the ancient structures, of which they at one time formed an ornamental part. On the medallions, therefore, of the restored cross will be carved the arms of Mr. Gladstone, as also those of Mrs. Gladstone; the royal arms of Scotland, of the United Kingdom, and other appropriate devices. Between the Ionic columns are eight semicircular arches, with key-stones and key-blocks. In the centre of one of these arches is an oak door, studded with nails, by which access is obtained to a stair leading to an open platform on the top of the cross—upon which thirty people might easily stand. This platform is 13 feet from the ground, and the parapet rises 3 feet higher. Three bands of carving are carried round the cross—one consisting of a series of flutes, the second of acanthus leaves, and the third of an egg and dart pattern, and each bastion is provided with a gargoyle. Round the base are three steps, which will add to the height of the structure. Rising from the centre of the roof platform already referred to will be the old shaft with its capital and unicorn, which at present stands within the railing of St. Giles's Cathedral. The cross will be built of Hermand stone from a quarry near Mid-Calder. The Town Council have fixed the site for the restored cross in the open space between the east end of St. Giles and the police buildings. When it is finished it will, no doubt, be made by some legal instrument the "mercato cross" of the city, and from its platform royal and other proclamations will again be read by the heralds as in the olden days.

### FIRES IN LONDON.

A MEMORIAL from the London Chamber of Commerce was lately presented to the Metropolitan Board of Works urging that, owing to the inadequate protection now afforded against fires in London, "the Metropolitan Fire Brigade should be materially strengthened, with a view of lessening the hardships to which insurers are subjected on account of increasing danger from fire in the metropolis, and the heavily augmented premiums required by the insurance companies to cover additional risks." After setting forth at some length the views of the Chamber, and mentioning, among other considerations, the fact that insurers losing or suffering from damage to their property by the action of the Queen's enemies are unable to recover any indemnity from the insurance companies under their fire policies, the memorial concludes with the prayer that the Metropolitan Board of Works will "increase the strength and appliances of the Metropolitan Fire Brigade, providing for the same by additional contributions from the public, and in such a manner that the increased cost should not fall upon the insurers only, but also on (a) the uninsured, (b) the inhabitants of the metropolis, (c) the Government, and (d) the insurance offices." In reply, Mr. J. E. Wakefield, the clerk of the Board,



writes, under date June 13 :—"The Board's power in respect of the Fire Brigade is limited to the measure of the pecuniary resources placed at the Board's disposal for the purpose by the Legislature. At the present time the expenditure upon the Fire Brigade is considerably in excess of the statutory income; and a Bill which the Board introduced into Parliament last session for increasing this income failed to pass, mainly owing to the declared opposition of the fire insurance companies, whose contributions it was proposed should be augmented in proportion to the increased charges to be placed upon the ratepayers. I am, however, to state that so soon as the Legislature shall have placed the Board in possession of additional resources, the Board will carefully reconsider the requirements of the metropolis as regards its protection from fire."

### EXCAVATIONS AT EPHEBUS.

A MEETING of subscribers and others interested in the completion of the excavations at Ephesus, on the site of the Temple of Diana, was lately held at the rooms of the Royal Society of Antiquaries, Burlington House. The Bishop of Durham presided, and among those present were Mr. A. Beresford-Hope, M.P., Professor C. T. Newton, Mr. J. T. Wood, Mr. Bond, principal librarian, British Museum; Mr. W. Lowther, M.P., the Dean of Llandaff, the Rev. Sir Talbot Baker, Mr. S. Simpson, and Mr. T. Hayter Lewis, honorary secretary.

The Bishop of Durham, in an introductory address, expressed his belief that from excavation and exploration our great acquisitions in history were to be obtained. We had almost exhausted all that could be acquired from extant literature. It was, indeed, quite possible that we should at one time or another discover a new classic, but from the inscriptions chiefly, almost entirely, our great acquisitions of knowledge were henceforward to be obtained. Of all the regions in the earth, the most promising for excavations, if he mistook not, was Asia Minor. Of all districts of Asia Minor the one which bade fairest to give us valuable results was the pro-Consular provinces, of which Ephesus was the capital. Therefore, their interest must centre in Ephesus. He was quite sure that in many departments of knowledge far more was to be learnt from the inscriptions than from the extant literature. It was so, for instance, in the political and municipal life of the cities of Asia Minor. It was so with regard to their outdoor life, festivities, and the like. It was so especially with regard to their religious life. For example, they really had not the faintest conception of the power and vigour of the Roman *Cæsar* worship, or State worship, which culminated in the middle of the second century in Asia Minor, until they made a careful study of the inscriptions. Above all was the predominance of the worship of the great goddess Artemis. One could read in the inscriptions how that the goddess had a month of her own, and how that this month bore her name, not only in Ephesus, but elsewhere far and wide. Very full information was given with regard to the images in the temple, and mention was even made in the inscriptions of the plate-powder which was used in cleansing the images. There was very detailed information with regard to the hierarchy of the Temple of Artemis, with its orders of priests and priestesses, its robe-bearers, choristers, theologians, guards, and temple wardens, and other interesting terms used in connection with the temple.

Professor C. T. Newton, keeper of Greek and Roman antiquities at the British Museum, moved the following resolution:—"That the sculptures already found on the site of the Temple at Ephesus, and only forming a small portion of the entire remains, are incontestably of the highest artistic value, while the inscriptions, now being prepared for publication, prove also to be of great value in both a literary and archaeological point of view." The collection of inscriptions from Ephesus, he said, was not exhausted by the class which the chairman had so ably dealt with. It comprehended a vast number of documents of the highest historical importance, and especially documents which threw light on what Niebuhr declared to be the most obscure period in Greek history. After expressing his very high sense of the value of Mr. Wood's discoveries, Professor Newton went on to draw attention to one single inscription, which was, he said, unique of its kind. It related to what he might call one of the burning questions of the day. There was a war which was described in this inscription as the Common War. They did not exactly know what war was alluded to, but thought it was the invasion of the Gauls, who very much harassed Asia Minor about 270 B.C. But the results of that war, as affecting landowners and credit generally, were unmistakably stated in the inscription; and the evidence showed that real property then was regarded with the same desire for its permanent security, was fenced round with the same security, but at the same time was liable to the same disturbances as it was now. There were some very interesting inscriptions relating to Greek real property, which were only

just beginning to be understood. In connection with the commercial and social troubles following upon the Common War, it appeared from the inscriptions that the method adopted for remedying the evils was to call in dikasts from another state who might deal with the suits that had arisen without suspicion of partiality. In adopting this system of arbitrators, therefore, and in providing further, as they did, that the experts should be chosen by ballot, the Ephesians seemed to have been actuated by the fairest motives. The more they looked into the Greek inscriptions the more they found that astonishing love of order, that love of the abstract notion which they called law, pervaded the whole time down to the Roman conquest.

Mr. Beresford-Hope, M.P., seconded the resolution.

Mr. Wood gave a brief account of his work, and observed that what he had found at Ephesus recently encouraged him to persevere even to the end. Touching on the sculpture and the architecture of the temple, he said there had been many readings of the words of Pliny, but in his opinion Pliny had described the temple in a very slovenly manner. He knew he ran great risk in saying so, but he could prove it by what he had found.

The resolution was carried unanimously.

The Dean of Llandaff moved:—"That, as there is good reason to believe that many other sculptures and inscriptions may be found if the work of exploration were thoroughly completed, a new subscription-list be immediately begun, and a sub-committee, consisting of the chairman of the committee, the hon. secretary, Professor Newton, Mr. Wollaston Blake, and such other members as may be nominated by the committee, be formed and authorised to take such steps as they may consider necessary for completing the work."

Sir Talbot Baker seconded the resolution, which was also adopted.

Votes of thanks to the Society of Antiquaries for the use of the hall and to the Bishop of Durham for presiding terminated the proceedings.

### PRESERVATION OF TIMBER.

A COMMITTEE of the American Society of Civil Engineers was formed some time ago to investigate the subject of preservation of timber, and the report has been prepared. All the methods are classed under three heads, viz. (1) steeping, (2) vital suction or hydraulic pressure, (3) treatment in close vessels by steaming, vacuum pressure, &c. The systems most in use are:—1. Kyanizing, or use of corrosive sublimate. 2. Burnettizing, or use of chlorine of zinc. 3. Creosoting, or use of creosoting oil. 4. Boucherie, or use of sulphate of copper. 5. Miscellaneous, or use of various substances.

Of the first, Kyanising, it is stated that an absorption of four or five pounds of corrosive sublimate per 1,000 feet, b.m., is considered sufficient, and it would now cost about 6 dols. per 1,000 feet. It is not recommended except in situations where the air can circulate freely about the wood, as in bridges and trestles, but in very damp locations (as for ties when in wet soil and pavements), its success is doubtful. Its cost when first used led to cheating, which for a time brought discredit upon it.

Burnettizing the committee does not consider the best adapted to use where the timber is exposed to the washing action of water (as this removes the preservative); but, on account of its cheapness, it is probably to be preferred at the present time to any other process for the preservation of railroad ties. The Wellhouse, Thilmany, and other modifications of the process aim at making the chloride insoluble, but are yet on trial. This process has been largely and successfully introduced in Germany. Experience shows the life of soft wood ties to be doubled and trebled by its use. Its cost in America is about 5 dols. per 1,000 feet, b.m., or 20 to 25 cents per tie, and for the latter purpose the committee particularly recommend it. The work must be well done; but some of the failures were from doing it too well—that is, from using solutions of too great strength, thus making the timber brittle. A solution of 2 per cent. by weight of chloride of zinc in water is recommended.

Creosoting, or the injection of timber with hot creosote oil in a cylinder under pressure, is considered to be the very best process which has been fully tested, where expense is not considered. It is as yet the only one known which is sure to prevent the destructive attacks of the teredo or other marine animals, and to give absolute protection against decay in very wet situations. It is a somewhat expensive process, requiring for protection against the teredo from 10 to 20 pounds per cubic foot of timber, and costing from 12 dols. to 20 dols. per 1,000 feet, b.m. For resisting decay alone a cost of 10 dols. to 14 dols. is sufficient.

The Boucherie process, in which green timber is impregnated with sulphate of copper either by vital suction, hydraulic



pressure, or a vacuum, when well done, using a solution of one pound of sulphate to 100 of water, has proved fairly successful.

Under the head of "Miscellaneous" are classed 41 experiments, with almost as many substances—sulphate and pyrolignite of iron, lime, resin, oil, tar, &c.—but with, as yet, no commercial success.

The general principles laid down are to select the process with reference to the subsequent exposure. Use open-grained, porous timber; for that reason, in general, the cheaper woods. Extract the sap and water to make room for the material to be injected—natural seasoning, except for the Boucherie process, being very desirable. Steaming takes the place of seasoning. Use enough of the antiseptic to insure a good result, and then let the timber dry before using, as its durability will thus be increased. Do not hasten the work if it is to be well done. Protect ties or timber in the track, as far as may be, from water by drainage. Contract only with reliable parties of established reputation, under a skilled inspector, who must be in constant attendance when the magnitude of the order warrants.

## Bygones.

"Antiquity after a time has the grace of novelty."—HAZLITT.

### WINCKELMANN ON "THE LAOCOON."

ONE of the books which have created revolutions in human thought is Lessing's "Laocoon." It owes its origin to an essay by Winckelmann on "The Imitation of the Greeks in Painting and Sculpture," written in 1756, and which was the raising of a standard of revolt against the Rococo and all its works and pomps. Winckelmann maintained that in proportion as modern work approached the Greek, it became nearer perfection. But in his enthusiasm he laid down a hard-and-fast rule, and overlooked the fact that it might be true enough in sculpture, but did not apply in literature. Lessing accordingly wrote "The Laocoon" to demonstrate the difference between art and poetry. He explained that while the painter or sculptor endeavoured to gratify the external senses, the poet appealed to the imagination. Now the discovery may not appear to have much value, but in the eighteenth century it became a sort of redemption for thinkers like Goethe. The large History of Ancient Art by Winckelmann has caused his first essay to be overlooked. Accordingly we give that part which excited Lessing to produce "The Laocoon." We take it from a translation which was made by Fuseli in the days before he took up painting, and when he was known in London as a literary hack:—

The last and most eminent characteristic of the Greek works is a noble simplicity and sedate grandeur in gesture and expression. As the bottom of the sea lies peaceful beneath a foaming surface, a great soul lies sedate beneath the strife of passions in Greek figures.

'Tis in the face of Laocoon this soul shines with full lustre, not confined, however, to the face, amidst the most violent suffering. Pangs piercing every muscle, every labouring nerve; pangs which we almost feel ourselves, while we consider—not the face, nor the most expressive parts—only the belly contracted by excruciating pains: these, however, I say, exert not themselves with violence, either in the face or gesture. He pierces not heaven, like the Laocoon of Virgil; his mouth is rather opened to discharge an anxious overloaded groan, as Sadolet says; the struggling body and the supporting mind exert themselves with equal strength—nay, balance all the frame. Laocoon suffers, but suffers like the Philoctetes of Sophocles: we weeping feel his pains, but wish for the hero's strength to support his misery.

The expression of so great a soul is beyond the force of mere nature. It was in his own mind the artist was to search for the strength of spirit with which he marked his marble. Greece enjoyed artists and philosophers in the same persons; and the wisdom of more than one Metrodorus directed art, and inspired its figures with more than common souls. Had Laocoon been covered with a garb becoming an ancient sacrificer, his sufferings would have lost one-half of their expression. Bernini pretended to perceive the first effects of the operating venom in the numbness of one of the thighs.

Every action or gesture in Greek figures not stamped with this character of sage dignity, but too violent, too passionate, was called "Parthyrsos." For the more tranquillity reigns in a body the fitter it is to draw the true character of the soul, which in every excessive gesture seems to rush from her proper centre, and being hurried away by extremes becomes unnatural. Wound up to the highest pitch of passion, she may force herself upon the duller eye; but the true sphere of her action is sim-

licity and calmness. In Laocoon sufferings alone had been parathyrsos; the artist therefore, in order to reconcile the significative and ennobling qualities of his soul, put him into a posture, allowing for the sufferings that were necessary, the next to a state of tranquillity—a tranquillity, however, that is characteristic: the soul will be herself—this individual—not the soul of mankind; sedate, but active; calm, but not indifferent or drowsy.

What a contrast! how diametrically opposite to this is the taste of our modern artists, especially the young ones! On nothing do they bestow their approbation, but contortions and strange postures, inspired with boldness; this they pretend is done with spirit, with *franchezza*. Contrast is the darling of their ideas; in it they fancy every perfection. They fill their performances with comet-like eccentric souls, despising everything but an Ajax or a Capaneus.

Arts have their infancy as well as men; they begin, as well as the artist, with froth and bombast; in such buskins the muse of Æschylus stalks, and part of the diction in his "Agamemnon" is more loaded with hyperboles than all Heracitus's nonsense. Perhaps the primitive Greek painters drew in the same manner that their first good tragedian thought in.

In all human actions flutter and rashness precede, sedateness and solidity follow: but time only can discover, and the judicious will admire these only; they are the characteristics of great masters; violent passions run away with their disciples.

The sages in the art know the difficulties hid under that air of easiness:—

ut sibi quivis  
Speret idem, sudet multum, frustra que laboret  
Ausus idem.—HOR.

La Fage, though an eminent designer, was not able to attain the purity of ancient taste. Everything is animated in his works; they demand, and at the same time dissipate, your attention, like a company striving to talk all at once.

This noble simplicity and sedate grandeur is also the true characteristic mark of the best and maturest Greek writings, of the epoch and school of Socrates. Possessed of these qualities Raphael became eminently great, and he owed them to the ancients. That great soul of his, lodged in a beauteous body, was requisite for the first discovery of the true character of the ancients: he first felt all their beauties, and (what he was peculiarly happy in!) at an age when vulgar, unfeeling, and half-moulded souls overlook every higher beauty.

Ye that approach his works, teach your eyes to be sensible of those beauties, refine your taste by the true antique, and then that solemn tranquillity of the chief figures in his *Attila*, deemed insipid by the vulgar, will appear to you equally significant and sublime. The Roman bishop, in order to divert the Hun from his design of assailing Rome, appears not with the air of a Rhetor, but as a venerable man, whose very presence softens uproar into peace. Like him drawn by Virgil:—

Tum pietate gravem ac meritis, si forte virum quem  
Conspexere, silent, adrectisque auribus adstant.—ÆU. I.

Full of confidence in God, he faces down the barbarian. The two Apostles descend not with the air of slaughtering angels, but (if sacred may be compared with profane) like Jove, whose very nod shakes Olympus.

Algardi, in his celebrated representation of the same story, done in bas-relief on an altar in St. Peter's Church at Rome, was either too negligent or too weak to give this active tranquillity of his great predecessor to the figures of his Apostles. There they appear like messengers of the Lord of Hosts—here like human warriors with mortal arms.

How few of those we call connoisseurs have ever been able to understand, and sincerely to admire, the grandeur of expression in the St. Michael of Guido, in the church of the Capuchins at Rome! They prefer commonly the Archangel of Concha, whose face glows with indignation and revenge, whereas Guido's Angel, after having overthrown the fiend of God and man, hovers over him unruffled and undismayed. Thus to heighten the hero of "The Campaign," victorious Marlborough, the British poet paints the avenging angel hovering over Britannia with the like serenity and awful calmness.

The royal gallery at Dresden contains now among its treasures one of Raphael's best pictures, witness Vasari, &c., a Madonna with the Infant, St. Sixtus and St. Barbara kneeling, one on each side, and two angels in the forepart. It was the chief altar-piece in the cloister of St. Sixtus at Piacenza, which was crowded by connoisseurs, who came to see this Raphael in the same manner as Thespis was in the days of old, for the sake of the beautiful *Cupid* of Praxiteles.

Behold the Madonna! Her face brightens with innocence. A form above the female size, and the calmness of her mien, make her appear as already beatified—she has that silent awfulness which the ancients spread over their deities. How grand, how noble is her contour! The child in her arms is elevated above vulgar children by a face darting the beams of divinity through every smiling feature of harmless childhood.



St. Barbara kneels with adoring stillness at her side, but being far beneath the majesty of the chief figure, the great artist compensated her humbler graces with soft, enticing charms. The saint opposite to her is venerable with age. His features seem to bear witness of his sacred youth. The veneration which St. Barbara declares for the Madonna, expressed in the most sensible and pathetic manner by her fine hands clasped on her breast, helps to support the motion of one of St. Sixtus's hands, by which he utters his ecstasy, better becoming (as the artist judiciously thought, and chose for variety's sake) manly strength than female modesty.

Time, 'tis true, has withered the primitive splendour of this picture and partly blown off its lively colours, but still the soul with which the painter inspired his godlike work breathes life through all its parts. Let those that approach this and the rest of Raphael's works, in hopes of finding there the trifling Dutch and Flemish beauties, the laboured nicety of Netscher or Douw, flesh ivoryified by Van der Werf, or even the licked manner of some of Raphael's living countrymen, let those, I say, be told that Raphael was not a great master for them.

### SOME AMERICAN MUSEUMS.

A REPORT has been prepared by Professor Ball, F.R.S., the general director of the Science and Art Museum in Dublin, on several of the museums in America which he lately visited. Speaking generally of them, the professor says that he was impressed with the system, thoroughness, and good order which appeared to pervade the arrangements in the majority of these institutions. Many of them are of late growth, but already possess an astonishing degree of vigour, while their supporters and officers look forward in a spirit of great hopefulness to what must be described as gigantic extensions of their spheres of usefulness in the future. Largely dependent for their existence on the liberality of private individuals, they take what aid they can get from the Government, and it amounts, in the majority of cases, merely to State recognition. Those of them which possess directly educational functions claim an abundant harvest of good results, and there can be no doubt that the facilities which now exist for instruction in science and art are largely availed of in the principal cities of America.

The first is the Smithsonian Institution at Washington, which was founded by an Englishman who died at Genoa in 1829 and left a sum of money for the purpose, which now produces an income of 42,180 dols. The policy of the institution is to initiate original plans for abstruse research, especially in lines not occupied by other organisations. It freely gives its publications and specimens without requiring an equivalent in return, and places its books, apparatus, and collections at the disposal of investigators and students in any part of the world.

The National Library and National Museum at Washington have been founded in connection with the Institution. The museum building was commenced in the year 1879, and by 1881 the offices and collections were moved into it. It is in the form of a square with sides of 327 feet extreme length, and a central rotunda or dome. The total superficial area included within the walls amounts to 102,200 square feet. In the basement rooms the steam-heating apparatus, an engine, coal vaults, and stores are all provided for. On the main floor there are seventeen halls, communicating with each other by lofty archways, and affording 80,300 feet of floor and space; besides which there are on the same floor and two upper storeys 135 rooms for offices, working rooms, photographer, restaurant, &c. These together represent a space of 27,400 square feet, besides which there are about 4,000 square feet in the galleries.

The centre of the building is octagonal on the ground, passing upwards into a sixteen-side polygon 67 feet in diameter, in which there are large windows, the whole being surmounted by a slate roof and lantern, crowned by a Decorated finial, which is 108 feet from the ground. The masonry is of red brick, relieved by courses, &c., of buff and blue enamelled bricks, and a base course of granite. The main entrance, window sills, &c., are of freestone. The floor beams, girders, and roofs are of iron, and the floors are fireproofed by brick arches and concrete. The floors of the exhibition halls are of marble and tile; those of the offices and smaller halls of Florida pine. The illumination is stated to be most perfect. The cases are all of one length, 8 feet 8 inches, or sub-multiples of that length, which is the architectural unit of the building. Professor Ball expresses his admiration of the standard furniture and fittings which he saw in use, and which have the advantages of simplicity and interchangeability. Already in the Science and Art Museum of Dublin he has adopted the system, and presses have been constructed to carry interchangeable unit drawers and multiples of the unit in two dimensions.

In Philadelphia there is a museum belonging to the Academy of Natural Sciences, which was opened in 1876. Like many of the public buildings in the city, it is built of brick faced

with green serpentine, and the style adopted is Gothic. The museum and its valuable collections owe their existence exclusively to the generous gifts and gratuitous labour of private individuals. The Pennsylvania Academy of Fine Arts, which was first incorporated in 1806, occupies a handsome and commodious building in Broad Street; it is thoroughly fireproof, and the style of the architecture is Byzantine or Venetian. The material used in the construction consists largely of sandstone, marble, and granite from American localities, but some of the marble is foreign. The total cost was 400,000 dols. It is claimed to be the largest and most complete structure for the purposes of an art gallery and school, &c., in America. The several departments are as follows:—The library, which contains 1,200 volumes on art subjects. The print-room, where there are many thousands of engravings, etchings, and mezzotints, including the John S. Phillips's collection of upwards of 60,000 examples. This gentleman, a retired merchant of Philadelphia, presented the collection to the Institution. The antique rooms contain reproductions of many famous statues and the Elgin marbles, &c. Here, it may be mentioned, that over the main portal, a mutilated colossal statue of Ceres, which was dug up at Megara, in Greece, has been placed. The picture galleries are six in number. They contain, among others, many valuable paintings by old masters and modern artists of repute. The principal part of them formerly belonged to the Carey and Earl collections, which are now fully incorporated with others. The Academy is, at times, the recipient of noble gifts, as in the year 1880, when it received a sum of 60,000 dols. from Mr. Joseph E. Temple. The Academy is well provided with rooms for instruction from the life, painting, modelling, &c. The instruction is gratuitous, but applicants for admission to the classes are required to furnish satisfactory evidence that they already possess a capacity for drawing. The Pennsylvania Museum and School of Art is an imitation of the South Kensington Museum. The Memorial Hall in which it is located was one of the buildings occupied by the Centennial Exhibition of 1876, but, unlike the others, it was designed as a permanent structure; the principal materials employed being Virginia and Massachusetts granite and Pennsylvania iron. The façade is in the Renaissance style with arch balustrade and open arcade. The lighting is said to be admirably suited for the purpose of exhibiting pictures and statuary. The building contains 75,000 feet of wall space and 2,000 feet of floor space.

### LEGAL.

#### Queen's Bench Division.—June 23.

Before LORD COLERIDGE and Mr. JUSTICE MATHEW.

JOSELYN v. MEESON.

LODGMET OF PLANS.

According to one of the by-laws made under the Metropolis Management and Building Acts Amendment Act it is the duty of any person giving notice to a district-surveyor of the intended erection, alteration, or addition to a public building to deposit plans and sections relating to the work. The appellant in this case had been convicted of a breach of the provisions for building an ambulance station without notice in writing, with plans and drawings. It appeared that notice was given, but without the plans and sections, and the question was whether this ambulance station was a public building within the Acts, such as to require the deposit of plans and sections along with the notice. The statutory definition of "public buildings" was "any church, hospital, or building for any other public purpose." The ambulance station was erected at Homerton by the appellant for the Metropolitan Asylums Board, under the direction of Messrs. A. & C. Harston, architects. It was not actually connected with any fever hospital, though it was near one, and it was intended for the use of all fever hospitals in the metropolis by way of stabling for horses, &c. The builder being summoned before the magistrate for a breach of the by-laws, it was contended that he was not liable, as this was not a public building. The magistrate, however, thought otherwise, and convicted the builder, but stated a case to raise the question, and it stated that the public were not admitted to it under any circumstances.

Counsel for the defendant argued that it was not a "public building" within the Act. Mr. Meeson, the district-surveyor, appeared in person, and submitted that it was a "public building."

The Court, however, were clear that it was not, and gave judgment for the appellant, with costs.

#### High Court of Justice.—June 20.

SCOTT v. PAPE.

ANCIENT LIGHTS.

Judgment was delivered on Saturday by Mr. Justice North on an important point in connection with the law as to ancient lights. The plaintiff was the owner of a building on the west



side of Denton Yard, Newcastle-on-Tyne, which he had himself erected in 1872, in the place of old buildings, the windows of which had undoubtedly been ancient lights. In rebuilding the plaintiff had advanced the east wall by two or three feet, so that it was by so much nearer to the defendant's building on the opposite side of the yard. There was no record preserved of the windows in the old wall, but an arbitrator had ascertained their position in relation to the windows in the new wall; and it was clear that, although none of them corresponded in entirety with the new windows, yet some of them did occupy parts of the spaces of those windows. The defendant had recently pulled down his building, and was re-erecting it to a greater height, thus interfering with the lights of the plaintiff, who sought an injunction to restrain the encroachment. The point of law which was argued in the case was whether the plaintiff had not, by altering the plane of his wall in 1872, abandoned his ancient lights. His lordship, after reviewing in detail the facts of the case and the authorities bearing upon the point of law, held that the defendant had not established that which alone could justify him, namely, a clear intention on the part of the plaintiff to abandon his ancient lights, so far as he had not himself closed them up. No conclusive evidence of such intention had been adduced, and the law maintained the right in respect of any substantial part which was preserved of an ancient window. There were cases which showed that the "retirement" of a wall when altering buildings did not take away the previously existing rights in respect of that wall, and the same principle must apply to the "advancement" of a wall. So far, therefore, as the plaintiff's present windows were a substantial continuation of his old lights, and admitted rays of light which would have passed through the old windows in the old wall, the plaintiff was, notwithstanding the altered plane, entitled to an injunction. The defendant was ordered to pay the costs of the action.

#### Four Courts, Dublin.

(Before Mr. Baron DOWSE.)

PILE V. ST. PATRICK'S CATHEDRAL BOARD.

SURVEYOR'S MEMORANDA NOT PRIVILEGED.

This was an action brought to recover 4,743*l.* for work and labour done by the plaintiff, as a contractor for works and repairs at St. Patrick's Cathedral, carried out in 1882 and 1883. The defences included one that the work was done and repairs executed under an agreement that the plaintiff was to be paid according to the measurements of Messrs. Patterson & Kempster, building surveyors. In March last the plaintiff obtained an order for discovery of documents; and the affidavit made by Mr. A. Smith, on behalf of the defendant, being unsatisfactory, he, on June 3 last, obtained a further order for discovery, under which order a large number of further documents had been disclosed; but the affidavit had omitted certain original notes of measurements of the works made by Messrs. Patterson & Kempster, and which had, it appeared, been kept back on the ground that they did not belong to the defendants, and that therefore they could not disclose them.

Counsel applied on behalf of the plaintiff for an order of inspection of the notes of measurements and other documents not shown to be privileged. From the affidavits filed in support of the motion it appeared that the Board of St. Patrick's Cathedral had passed a resolution refusing to allow Mr. Pile inspection of these documents; and that they were in the possession of Messrs. Patterson & Kempster, who were employed by them; and it was contended that the defendants had the power, and were bound to disclose these documents and produce them for inspection.

Counsel for the defendants contended that his clients had no control over Messrs. Patterson & Kempster—that they had completed their duty between the parties by making out bills of measurement, which were deductions from the original notes, and that they were not bound to produce these notes, and that builders were not entitled to them; and contended further that the documents for which inspection was sought were privileged on the ground that they were information collected for the purpose of litigation.

Mr. Baron Dowse said a substantial portion of the motion must be granted—that Messrs. Patterson & Kempster owed it to both parties to produce these notes of measurements; and under the circumstances which had transpired he made an order for their production by the defendants' solicitors to the plaintiff and his solicitors on a day to be named by the order, the defendants also to pay the costs of the motion. As to the other documents, for which privilege was claimed, the learned judge said that the affidavit made by Mr. Smith, though ambiguous, seemed to bring these documents within the rule of privilege, and as the plaintiff had not cross-examined Mr. Smith he would make no rule on that part of the motion.

## CHURCH BUILDING AND RESTORATION.

**Newark.**—The foundation-stone of the Brough Chapel, near Newark, was laid on the 3rd ult. The buildings, which comprise a chapel with porch, and schoolroom in the rear, are of red brick and Ancaster stone dressings. Mr. Baines, of Newark, is the builder, and the works are being carried out at a cost of 450*l.* from designs by Mr. T. Butler Wilson, architect, 12 East Parade, Leeds.

**Chilcote.**—The church of Chilcote has been reopened after renovation. The original church, which was erected in the Norman period, has for many years past shown signs of rapid decay. Under the direction of Mr. Champneys, the walls of the old church have been cased inside and out with stone obtained from a quarry situate a few hundred yards from the church, whilst the main portion of the roofing has been preserved. The execution of the work was entrusted to Messrs. Charles Clarson & Sons, of Tamworth, and the plumbing work was executed by Mr. H. Hare, of Tamworth.

## SCHOOL BUILDINGS.

**Apperley Bridge.**—The laundry buildings, &c., in connection with the Woodhouse Grove Schools, Apperley Bridge, near Leeds, which were burnt down in February last, are to be rebuilt and fitted with machinery of the most approved pattern, concrete flooring being used. Over the engine and drying-rooms further bedroom accommodation is to be provided, also day and night staircases to the rooms on first floor, the night stairs to bedrooms, and the day stairs to boys' mechanical rooms and laboratory. The works are being carried out at a cost of 800*l.* from the designs and under the superintendence of Mr. T. Butler Wilson, architect, 12 East Parade, Leeds.

**Ipswich.**—A new Board school for infants has been opened at Rose Hill. The work was carried out by Mr. R. S. Smith, builder, of Ipswich, from the designs and under the supervision of Mr. E. F. Bisshopp, architect and diocesan surveyor, 32 Museum Street, Ipswich.

## GENERAL.

An Art School has been established for Rochester.

The Pictures received for the Artists' Exhibition, to be opened next month in Aberdeen, already amount to nearly three hundred.

Mr. Ruskin has written to the curator stating that he has no intention of removing his museum from Sheffield, and intimates that Sheffield is the ultimate destination of the painting of St. Mark's, Venice, executed by the late Mr. John Bunney.

Mr. J. Oldrid Scott has inspected Twyford Church, the total cost of restoring which he estimates at 2,215*l.*

Mr. S. Dutton Walker, F.S.A. (Walker & Howitt, architects), died at his residence last week in Nottingham.

Plans have been prepared for the erection of four mammoth warehouses at Brooklyn, U.S., on the river front, just above Bay Bridge. They are to be large enough to each hold 2,000,000 dols. worth of coffee, jute, hemp, sugar or fruits.

Competitive Plans are required for public buildings proposed to be erected for Coupar Angus.

Mr. James Maclaren, president, read a paper describing the abbey of Arbroath, at the visit of the members of the Dundee Institute of Architecture to the ruins on Saturday.

The "Gazette" announces the dissolution of partnership between Messrs. J. Maxwell, W. C. Tuke, and S. Hurst, architects, of Southport.

The Committee of the Meanwood Institute, near Leeds, of whom the Rev. Annesley Powys, vicar of Holy Trinity, is the chairman, decided to increase the accommodation by the erection of a public hall, &c. Plans were invited in limited competition, and submitted to Sir Edmund Beckett, Bart., when the designs of Mr. T. Butler Wilson, architect, 12 East Parade, Leeds, were selected.

**Liverpool Architectural Society.**—At the second meeting of the Junior Debating Club, held at the rooms, No. 9 Cook Street, Mr. James B. Hinks in the chair, a paper was read by Mr. Thomas J. Dalziel (visitor) on "Early Gothic Vaulting," and a discussion followed, in which Messrs. J. S. A. Mercer, Edmund Rathbone, J. H. Dawson, the chairman, and others took part. At the next meeting, on the 29th inst., Mr. James K. Hinks will read a paper on "Terra-cotta."

The Project of an underground railroad in Philadelphia, to run along Chestnut or Market as far as Fifty-sixth Street, has met with much favour. The estimated cost is 600,000 dols. per mile, or 3,000,000 dols. for the whole road, exclusive of rolling stock.

A Theatre is proposed to be erected in Bolton, and steps are being taken for acquiring a central site.



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A Business Supplement

# The Contract Reporter.

to The Architect.

LONDON, JUNE 27, 1885.

## NOTICE TO OUR READERS.

On and after July 3 THE ARCHITECT will be dated on the day of publication, which has always been Friday, although the Paper has been dated on Saturday. This alteration is made to avoid the inconvenience which arises from many of our contributors sending us Tenders and other important information on Friday morning instead of Thursday. All communications intended for insertion in the current number must reach the Office as early as possible on Thursday afternoon. Literary matter should be addressed to the Editor, advertisements to the Publisher, 175 Strand, London, W.C.

## ADVERTISEMENT SCALE.

|                           |    |    |   |
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| For Two Lines and under   | £0 | 2  | 6 |
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Special arrangement may be made for a series of insertions on application to the Publishers, at the Office, 175 Strand, London, W.C.

## COMPETITIONS OPEN.

**BOURNEMOUTH.**—Aug. 19.—Designs are invited for the Construction of Two Marine Piers. Mr. G. R. Andrews, Town Surveyor, Bournemouth.

**BRISTOL.**—July 20.—Designs are invited for the Erection of Board Schools, Castle Green, for 1,000 children. Mr. Benjamin Wilson, Clerk to the School Board, Guildhall, Bristol.

**LIVERPOOL.**—Aug. 1.—Designs are invited for the Erection of Dwellings for the Labouring Classes. Mr. G. J. Atkinson, Town Clerk, Municipal Offices, Liverpool.

## CONTRACTS OPEN.

**ARMAGH.**—June 27.—For Building Manse and Offices, for the First Presbyterian Congregation. Mr. J. H. Fullerton, Architect, Armagh. Quantities by Mr. E. N. Banks, C.E., Chichester Street, Belfast.

**BECKENHAM.**—June 29.—For Construction of Seventeen Automatic Flushing Tanks and 4,000 feet of Pipe Sewer. Mr. G. B. Carlton, C.E., Surveyor to the Board, Beckenham.

**BELFAST.**—July 1.—For Erection of Mission Hall. Mr. Henry Seaver, B.E., Architect, 35 Royal Avenue, Belfast.

**BIRKENSHAW.**—June 29.—For Construction of Main Sewer, Side Drains, &c., Dewsbury Road. Messrs. Ogden & Moore, Surveyors, 40 Sunbridge Road, Bradford.

**BLAYDON.**—July 6.—For Laying Pipes for Sewerage and Water Supply. Mr. M. Hawdon, Surveyor, Local Board Offices, Blaydon-on-Tyne.

**BODMIN.**—July 6.—For Additions and Alterations to Wesleyan Chapel. Messrs. Hine & Odgers, Architects, Lockyer Street, Plymouth.

**BOGNOR.**—June 30.—For Building Assembly Hall, &c. Mr. A. Smith, Architect, Aston House, Bognor.

**BOLTON.**—June 30.—For Building Class-rooms to Board School, Pike's Lane. Messrs. Cunliffe & Pilling, Architects, Mawdsley Street, Bolton.

**BOLTON.**—July 6.—For Building Board School, Clarendon Street. Messrs. Morris & Son, Architects, 13 Mawdsley Street, Bolton.

**BRENTWOOD.**—For Building Drill Hall. Messrs. Haltridge & Cubitt, Architects, Brentwood.

**BURNLEY.**—July 2.—For Wrought Iron and Mason-work for Bridge over Canal, Finsley Gate. Mr. J. E. Stafford, C.E., Borough Surveyor, Burnley.

**BURSLEM.**—June 29.—For Building an Earthenware Manufactory. Mr. A. R. Wood, Architect, Tunstall.

**CAERPHILLY.**—June 29.—For Building Villa Residences. Messrs. Blessley & Aspinall, Architects, Guildhall Chambers, Cardiff.

**CANTERBURY.**—July 2.—For Building Wesleyan Methodist College. Mr. C. Bell, Architect, 9 New Broad Street, E.C.

**CAMBERWELL.**—June 30.—For Construction of Pipe Sewer (2,000 feet). The Surveyor, Vestry Hall, Peckham Road.

**CARDIFF.**—July 1.—For Laying 30 miles of Cast-iron Main Pipes of 29 and 24 inches diameter, together with the Construction and Erection of certain Bridges and Subways over and under Railways, Canals, and Rivers, for the reception of the Pipes, and other Works. Mr. J. A. B. Williams, C.E., Cardiff.

**CARDIFF.**—July 2.—For Building Cottage for Keeper at Lainshen Reservoir. Mr. J. A. B. Williams, Engineer, Queen's Chambers, Queen Street, Cardiff.

**CARLISLE.**—June 30.—For Supply of Iron-work and Special Castings during Twelve Months. Mr. J. Hepworth, Engineer, Gas-works, Carlisle.

**CARNON DOWNS.**—July 4.—For Reseating Wesleyan Chapel. Mr. Chandler, Union Place, Truro.

**CHADDETON.**—June 27.—For Building Ten Houses. Mr. S. Stott, Architect, Clegg Street, Oldham.

**CHESTER-LE-STREET.**—June 27.—For Building Shops, Warehouses, Stabling, Slaughter-house, &c. Messrs. S. Oswald & Son, Architects, 2 St. Nicholas Buildings, Newcastle-on-Tyne.

**CHISWICK.**—July 1.—For Construction of Fifty Flushing Wells and Providing Fifty Flushing Syphons. Mr. A. Ramsden, Surveyor, Vestry Hall, Turnham Green.

**CHRISTCHURCH.**—July 1.—For New Roofs and Works at Priory Church. Mr. E. Burton, Architect, Bournemouth.

**CLONAKILTY.**—July 10.—For Building Labourers' Cottages. Mr. T. Murphy, C.E., Cork.

**COWBRIDGE.**—June 27.—For Building Dwelling-house at Pentremeirig. Mr. G. F. Lambert, Architect, Town Hall, Bridgend.

**CROFTON.**—July 7.—For Construction of Branch Railway (1½ mile in length). Messrs. John Fraser & Sons, C.E., 31 Park Street, Leeds.

**DALTON-IN-FURNESS.**—June 30.—For Building Baptist Chapel. Mr. J. G. Anderson, 2 Fair View, Dalton-in-Furness.

**DARENTH.**—June 28.—For Supplying and Fixing Weighbridge at the Convalescent Small-pox Camp, Gore Farm. Messrs. A. & C. Harston, Architects, 15 Leadenhall Street, E.C.

**DODWORTH.**—July 2.—For Alteration of Roof of Church. Messrs. T. H. & F. Healey, Architects, Tyrryl Street, Bradford.

**DUBLIN.**—June 30.—For Building Screen Wall round Gasholders and Lime Store. Mr. O. Armstrong, Secretary, Irish Lights Office, Dublin.

**DUNSHAUGHLIN.**—June 30.—For Removing of Ventilating Towers on Main Building of Workhouse. Mr. M. Monahan, Clerk of the Union.

**EAGLESFIELD.**—June 29.—For Building Parsonage, Outbuildings and Boundary Walls. Rev. T. P. Moorhouse, Incumbent of Mosser, Cocker-mouth.

**EAST HOWLE.**—June 30.—For Building Infants' School and Additions to Board Schools. Mr. J. Henry, Architect, 11 North Bailey, Durham.

**EGREMONT.**—July 7.—For Construction of Outfall Sewer. Mr. A. Salmon, Surveyor, Public Offices, Egremont.

**FALMOUTH.**—June 30.—For Building Sunday-school. Mr. Henry Riley, Architect, Burton-on-Trent.

**FETTERANGUS.**—June 27.—For Building School. Mr. J. Aiken Pitfour, Estate Office, Mintlaw.

**FLIMBY.**—June 27.—For Building Two Cottage Houses. Mr. R. Mawson, Brook Street, Flimby.

**GALWAY.**—July 8.—For Building Constabulary Barrack. Mr. W. B. Soady, Secretary, Office of Public Works, Dublin.



GLASGOW.—June 30.—For Works of Addition to Bazaar in Candleriggs and Bell Street, The City Architect, 74 Hutcheson Street, Glasgow.

GLASGOW.—July 13.—For Construction of Western Portion of Railway (2 miles, 50 chains), and Quay or Pier (815 yards long). The Works include a Tunnel of about 2,052 yards long. Plans at the Engineer's Office, Buchanan Street Station, Glasgow.

HALIFAX.—July 2.—For Building Extensive Brick and Business Premises. Messrs. G. Buckley & Son, Architects, Halifax.

HALIFAX.—July 3.—For Alterations and Additions to Stable Premises. Messrs. Horsfall & Williams, Architects, Post-office Buildings, Halifax.

HANLEY.—For Additions to Bath Street Works. Messrs. R. Scrivenor & Sons, Architects, Howard Place, Hanley.

HARTSHILL.—June 27.—For Enlargement of National Schools. Rev. W. Northcott, Harts-hill Vicarage, Atherstone.

HENLEY-ON-THAMES.—July 7.—For Construction of Stoneware Pipe Sewers, Manholes, Ventilators, and Ejector Chambers, and Providing and Laying Cast-iron Sewage and Air Mains (7,000 yards), Construction of Air-compressing Machinery and Boilers, Engine and Boiler-houses, Tanks, Cottages, &c. Mr. Shone, C.E., 4 Westminster Chambers, Victoria Street, S.W.

Huddersfield.—July 2.—For Conversion of Buildings into Shops and Offices. Messrs. J. Kirk & Sons, Architects, Huddersfield.

INNERLEITHEN.—July 3.—For Taking Down Wooden Bridge over the Tweed, and Building a Stone and Girder Bridge. Mr. R. S. Anderson, Surveyor, Peebles.

KILLARNEY.—July 1.—For Construction of Killorglin Waterworks. Mr. E. McSweeney, Clerk to the Guardians, Killarney.

KNARESBOROUGH.—July 1.—For Telescopic Gasholder, and Construction of Brick Gas-holder Tank. Mr. W. Stansfield, Engineer, Gasworks, Knareborough.

LEAMINGTON.—June 27.—For Building Three Pairs of Semi-detached Villas. Mr. F. Foster, Architect, Euston Place, Leamington.

LEEDS.—June 29.—For Alterations at Captain May's House, Clarendon Road. The Borough Engineer, Leeds.

LEEDS.—June 27.—For Building Premises, Albion Street. Messrs. Smith & Tweedale, Architects, 12 South Parade, Leeds.

LONDON.—July 16.—For Construction of Brick Sewer and Subway, Foot and Carriage-ways, St. Giles. The Engineer, Metropolitan Board of Works, Spring Gardens.

LUDDENDEN.—June 30.—For Building Two Houses. Mr. T. Lister Patchett, Architect, George Street Chambers, Halifax.

LUDDENDEN FOOT.—July 11.—For Taking Down and Rebuilding Hollin Hall Farmhouse. Mr. J. Farrar, Architect, Crossley's Buildings, 29 Northgate, Halifax.

NATAL.—June 27.—For Wrought-iron Diving Cylinder. Messrs. Flannery & Baggallay, 9 Fenchurch Street, E.C.

NAVAN.—July 8.—For Building Labourers' Cottages. Mr. G. Lacy, Board of Guardians' Room, Navan.

NEWARK.—July 8.—For Construction of Sewage Works. Mr. G. Sheppard, Borough Surveyor, 9 Kirkgate, Newark.

PENARTH.—July 7.—For Building Villa. Mr. Henry Williams, Architect, Bristol.

PENTREMEIRIG.—June 27.—For Building Detached Dwelling-house. Mr. G. F. Lambert, Architect, Town Hall, Bridgend.

PETERBOROUGH.—July 1.—For Building Mission Hall and Class-rooms. Mr. W. Heath, Cowgate, Peterborough.

PICKERING.—June 27.—For Building Chancel to Middleton Church. Mr. C. Hodgson Fowler, Architect, The College, Durham.

PITSFORD.—July 3.—For Repairs and Alterations to Fox and Hounds Inn. Messrs. John Ingham & Son, Architects, Hazelwood Road, Northampton.

PONTYPRIDD.—June 30.—For Building 100 Cottages at Ynysybwl. Messrs. James, Seward & Thomas, Architects, St. John's Chambers, Cardiff.

POOLE.—June 28.—For Supplying and Fixing of a Kitchen Range, fitted with Hot-water Service for Supply Baths. Mr. John Elford, Borough Surveyor, King Street, Poole.

PORTSMOUTH.—July 15.—For Construction of Sewage Collecting Tank, Outlet Culvert, and Accessories. Mr. A. Hellard, Town Clerk, Portsmouth.

POTTERHANWORTH.—For Building Cart-horse Stable and Gear House. Mr. T. G. Dale, Solicitor, 2 St. Benedict Square, Lincoln.

PUDSEY.—July 2.—For Building Sunday School and Class-rooms at Waterloo. Mr. Samuel Robinson, Architect, 55 Tyrrel Street, Bradford.

RHYMNEY.—June 29.—For Extension of Pontlottyn Bridge. Mr. W. Lloyd Marks, Surveyor to the Board, 59 High Street, Rhymney.

ROATH.—July 8.—For Construction of Main and Branch Sewers (5,500 yards), with Outfall Works, Flushing Tanks, Manholes, Ventilating Shafts, Side Entrances, &c. Mr. W. Harpur, C.E., Town Hall, Cardiff.

ROCHDALE.—July 1.—For Supply of 18-inch and 24-inch Cast-iron Pipes. Mr. S. S. Platt, C.E., Borough Surveyor, Town Hall, Rochdale.

SADDLEWORTH.—For Foundation Walls for New Church, Scouthead. Mr. Dransfield, Architect, George Street, Oldham.

SALTBURN-BY-THE-SEA.—For Additions and Alterations to British Schools. Mr. J. Mitchell Bottomley, Architect, 1 Zetland Road, Middlesbrough.

SEDBERGH.—July 8.—For Building Farm-house, Benson Bank Estate. Mr. Shaw, Architect, Kendal.

SHIPLEY.—June 29.—For Extension of St. Paul's Church Schools. Mr. W. Wilcock, Architect, 9 Leeds Road, Bradford.

SOEWBY BRIDGE.—June 30.—For Supply of 4-inch Cast-iron Pipes (1,500 yards). Mr. John Marsland, Engineer, Gasworks, Sowerby Bridge.

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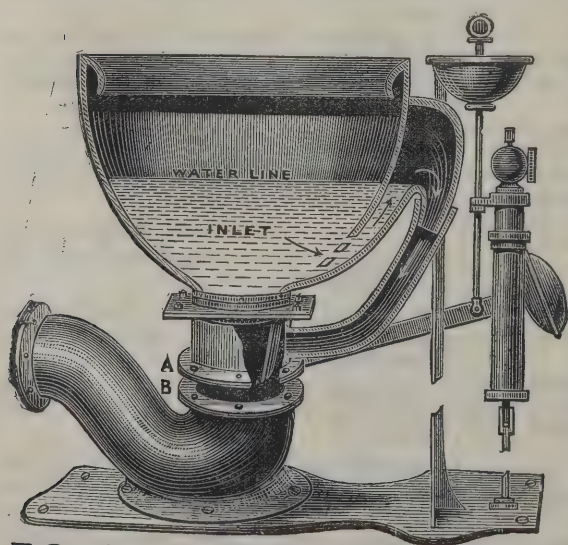
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This drawing illustrates an improvement in the trap of a Closet, which admits of the outlet being placed in any position to suit the soil-pipe. This object is attained by means of a collar, which is similar in shape to that of an ordinary Valve-Closet. The base of the collar being round is flanged A; this is attached to a corresponding flange B, formed on the end of Trap by means of screw bolts, and from the drawing it will be seen that the outlet can be fixed in any position. It is obvious that this system can be adopted in every case where a separate Trap is employed.

The "Safety" Valve Water-Closet, like the "Nestor" as regards the Basin, is made with a cast lead trap above the floor line. The Trap is constructed so that the water-line is within 1½ in. of the seating of the Closet; therefore it will be seen if there become any defect in the indiarubber seating, the trap still remains sealed; by this means the necessity of a ventilating pipe is also dispensed with, also the old system of having a weeping pipe from the supply to the Lead Trap fixed in the box of Closet, there being no space for the generation of gases. The overflow arm is also protected from the possibility of soil corroding the edge of pipe, as the clack is made to open against it.

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ST. BLAZEY.—June 30.—For Building Schools for Girls and Infants. Mr. A. S. Clunes, Architect, Fowey.

STRATFORD-ON-AVON.—June 30.—For Reconstruction of Board School Playgrounds. Mr. T. H. Mansell, Surveyor, 2 Newhall Street, Birmingham.

STROUD GREEN.—For Additions and Alterations to Browning's Farm-house. Mr. Girdwood, Architect, 18 Adam Street, Adelphi, W.C.

ST. STEPHENS.—July 8.—For Building Bridge, Culvert, &c. Mr. M. Spear, District Surveyor, Bodmin Road, St. Austell.

SUTTON-IN-ASHFIELD.—July 3.—For Construction of Waterworks, Building Engine and Boiler Houses, Engineer's Lodge, &c., at Rushley; Covered Service Reservoir at Coxmoor, Laying Pipes, &c. Mr. G. Hodson, C.E., Loughborough.

TADCASTER.—For Building two Semi-detached Villas in Brick. Mr. Thomas Howdill, Architect, 40 Park Lane, Leeds.

TONYPANDY.—June 27.—For Building Three Shops. Mr. E. Jones, Architect, Cwmmer, near Pontypridd.

TORQUAY.—July 1.—For Certain Waterworks at Shiphay. Mr. E. H. Harbottle, Architect, County Chambers, Exeter.

TOTTENHAM.—June 30.—For Building Concrete Walls or Piers at Entrance to Dock at Sewage Works. Mr. de Pape, Engineer, Coombes Croft House, High Road, Tottenham.

URSWICK.—June 27.—For Alterations and Additions to Vicarage. Mr. J. W. Grundy, Architect, Brogden Street, Ulverston.

VANGE.—July 1.—For Erection of Board School and Office Buildings. Mr. J. Young, Architect, 3 Great Winchester Street, E.C.

WALMERSLEY.—July 27.—For Building House. Mr. Nuttall, Broad Street, Bury.

WESTHAVEN.—July 10.—For Building Coast-guard Officer's House, Four Cottages, Store-room, Watch-room, Boat-house, &c. The Director of Works Department, Admiralty, 71 Spring Gardens, S.W.

WIMBLEDON.—July 31.—For Construction of Sewage Works with Reservoir, Cottages, Pumping Station, and Machinery, &c. Mr. W. H. Whitfield, Clerk to the Local Board, Broadway, Wimbledon.

WOLVERHAMPTON.—For Building Wesleyan Chapel at Whitmore Reans. Mr. C. Bell, Architect, Dashwood House, 9 New Broad Street, E.C.

WORKINGTON.—June 29.—For Building Infirmary. Mr. G. D. Oliver, Architect, 44 Pow Street, Workington, and Bank Chambers, Carlisle.

WREXHAM.—For Building Chapel, Vestry, and House at Rhosddu. Mr. T. G. Williams, Architect, 3 Cable Street, Liverpool.

WREXHAM.—July 2.—For Construction of Brick Gasholder Tank and Brick and Stone Boundary and Retaining Walls at the Gas-works. Mr. T. Newbigging, C.E., 5 Norfolk Street, Manchester.

YEADON.—July 3.—For Re-erecting Mill Premises for Messrs. Baldwin, Brown & Co. Mr. George Foggitt, Architect, Yeaddon.

YORK.—July 6.—For Building Stables and Sheds, Foss Island. Mr. G. Styant, City Surveyor, Guildhall, York.

## TENDERS.

### ABERDEEN.

For Building Public Shelter on the Links, Aberdeen. Mr. Wm. Boulton, C.E., Burgh Surveyor. Quantities by the Surveyor.

MACANDREW & Co. (accepted) . £70 0 0

### APPERLEY BRIDGE.

For Erection of New Laundry Buildings, &c., at the Workhouse Grove Schools, Apperley Bridge, Leeds. Mr. T. Butler Wilson, Architect, 12 East Parade, Leeds. Quantities supplied.

MYERS (accepted).

Engineering.

HOWGILL (accepted).

### ARDWICK.

For Building Bake-house, Flour Store, Dairy, Work-rooms, Cart Sheds, &c., Ardwick. Mr. JAMES JOHNSTON, C.E., Engineer and Architect, 4 Albert Square, Manchester. Quantities by Mr. L. Campbell, Manchester.

|                         |         |   |   |
|-------------------------|---------|---|---|
| Sandham, Thompson & Co. | £10,778 | 0 | 0 |
| Rome                    | 9,431   | 0 | 0 |
| Hampson & Co.           | 8,985   | 0 | 0 |
| Brown & Son             | 8,897   | 0 | 0 |
| Matthews                | 8,897   | 0 | 0 |
| J. Thompson             | 8,875   | 0 | 0 |
| J. McFarlane            | 8,725   | 0 | 0 |
| Whitell                 | 8,685   | 0 | 0 |
| F. & E. Haynes          | 8,675   | 0 | 0 |
| G. MacFarlane           | 8,625   | 0 | 0 |
| Webster                 | 8,582   | 0 | 0 |
| Neill & Son             | 8,540   | 0 | 0 |
| Parkinson               | 8,199   | 0 | 0 |

### BANDON.

For Construction of Bandon Waterworks. Mr. JAMES PRICE, Engineer, 44 Harcourt Street, Dublin.

|                                 |        |    |   |
|---------------------------------|--------|----|---|
| Johnson                         | £7,866 | 6  | 2 |
| Healey Bros.                    | 7,279  | 10 | 0 |
| Cunningham                      | 6,580  | 9  | 0 |
| Simpson                         | 6,456  | 0  | 0 |
| Bere                            | 6,324  | 16 | 0 |
| Dillon                          | 6,278  | 4  | 0 |
| O'Driscoll                      | 5,915  | 0  | 0 |
| Good                            | 5,950  | 10 | 8 |
| Highet                          | 5,712  | 0  | 0 |
| SMITH & LANE, Bandon (accepted) | 5,370  | 0  | 0 |

### BATLEY.

For Building Town Mission-room, Batley. Mr. WALTER HANSTOCK, A.R.I.B.A., Architect, Batley. Quantities by the Architect.

|  |      |    |   |
|--|------|----|---|
| J. & T. Oldroyd, Batley, mason               | £324 | 0  | 0 |
| Chadwick & Sons, Staincliffe, joiner         | 232  | 0  | 0 |
| Atkinson, Leeds, slater                      | 52   | 18 | 0 |
| Jessop, Batley, plumber                      | 38   | 10 | 0 |
| Metcalf & Lockwood, Heckmond-wike, plasterer | 25   | 10 | 0 |

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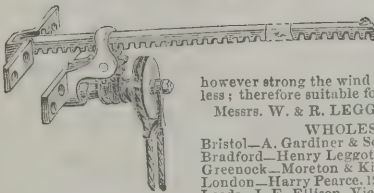
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London—Harry Pearce, 125 Great Portland St., W.  
Leeds—J. E. Ellison, Victoria Square.

### TESTIMONIAL.

January 17, 1884.

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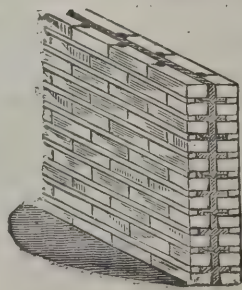
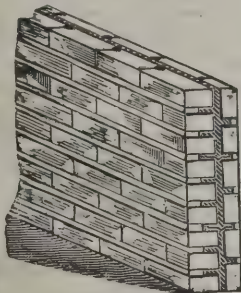
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|   |        |      |
|---|--------|------|
| For Making Roads and Streets, Totterdown, Bedminster. |        |      |
| Davis, Bedminster                                     | £1,670 | 0 0  |
| Osborne, Bristol                                      | 1,627  | 18 0 |
| Rossiter, Bedminster                                  | 1,594  | 2 0  |
| Martin, Bristol                                       | 1,525  | 14 9 |
| Beaven, Knowle  | 1,482  | 18 4 |
| Durnford & Son, Bedminster                            | 1,454  | 0 0  |
| HICKERY, Bristol (accepted)                           | 1,325  | 5 8  |

**BOURNEMOUTH.**

|   |        |     |
|---|--------|-----|
| For Erection of Gervis Buildings, for Messrs. Rebbeck Bros., Estate Agents. Mr. H. E. HAWKER, Architect, 5 Town Hall Chambers, Bournemouth. |        |     |
| Inwood, Malvern   | £6,368 | 0 0 |
| James, Bournemouth  | 6,170  | 0 0 |
| Crook & Sons, Southampton   | 5,913  | 0 0 |
| Minty, Bournemouth  | 5,900  | 0 0 |
| Howell, Bristol   | 5,850  | 0 0 |
| George, Bournemouth   | 5,775  | 0 0 |
| Hoare Bros. & Walden, Bournemouth   | 5,640  | 0 0 |
| McWilliam, Bournemouth  | 5,610  | 0 0 |
| JENKINS & SON (accepted)  | 5,584  | 0 0 |
| Lucas & Cosser, Bournemouth (subject to extension of time)  | 5,225  | 0 0 |

For Additions to McGill Memorial Mission Church. Mr. H. E. HAWKER, Architect, Bournemouth.

|                      |      |     |
|----------------------|------|-----|
| Hoare Bros. & Walden | £397 | 0 0 |
| Minty                | 390  | 0 0 |
| DAVIS (accepted)     | 347  | 0 0 |

**BRIGHOUSE.**

For Building Public Offices for the Local Board, Brighouse. Mr. JOHN LORD, jun., Architect. Quantities by the Architect.

Fearnley, mason.

Heaton, joiner.

Wood, plumber and glazier.

Anderson & Aynes, plasterer.

Gledhill & Barraclough, slater.

Turner, painter.

Beckwith Bros., ironfounder.

**BROUGH.**

For Erection of Wesleyan Church and School at Brough, near Newark. Mr. T. BUTLER WILSON, Architect, 12 East Parade, Leeds. Quantities supplied.

Whole of the Works.

BAINES, Newark (accepted).

**BURGESS HILL.**

|   |     |      |
|---|-----|------|
| For Supply of Lamp Pillars, Burgess Hill. |     |      |
| Burstow & Cozens                          | £92 | 16 0 |
| Packham & Son                             | 89  | 0 0  |
| Every                                     | 86  | 0 0  |
| REED & SON, Brighton (accepted)           | 58  | 0 0  |

**CARDIFF.**

|   |      |     |
|---|------|-----|
| For Alterations, new Bar, Fittings, &c., Coldstream Hotel, Cardiff, for Mr. T. John. Mr. S. W. RICHARDS, Architect, Herbert Chambers. |      |     |
| Gough   | £123 | 0 0 |

**CARLISLE.**

|  |        |      |
|--|--------|------|
| For Extension of Messrs. Carr & Co.'s Biscuit Manufactory, Caldewgate, Carlisle. Mr. T. TAYLOR SCOTT, Architect. |        |      |
| Tenders for Ironwork only.   |        |      |
| Pratchitt Bros.  | £1,140 | 0 0  |
| Stanfield & Son  | 1,080  | 0 0  |
| CAIRNS & CO. (accepted)  | 968    | 16 0 |
| J. & J. Matthews   | 911    | 0 0  |

**COLCHESTER.**

For Additions and Alterations to a Factory and Warehouse in Colchester. Mr. W. SCARGILL, Architect, Colchester. Quantities by the Architect.

|                 |      |      |
|-----------------|------|------|
| Gladwell        | £119 | 10 0 |
| Bowles          | 94   | 17 0 |
| Farren          | 89   | 0 0  |
| Ambrose         | 72   | 0 0  |
| PITT (accepted) | 71   | 10 0 |

**COWES.**

|   |        |     |
|---|--------|-----|
| For Building Post Office at Cowes. Mr. FRANCIS NEWMAN, Architect, Ryde. |        |     |
| Meador  | £1,312 | 0 0 |
| Thomas  | 1,247  | 0 0 |
| BALL (accepted)   | 1,175  | 0 0 |

**CORK.**

For Roof to Shed, Alterations to Girls' School, Taking down Clock Turret, and Repairing Chimney Shafts, &c., for the Cork Guardians.

|                      |      |      |
|----------------------|------|------|
| Evans, jun.          | £195 | 0 0  |
| Murphy               | 114  | 0 0  |
| Burke                | 79   | 10 0 |
| Roberts              | 70   | 0 0  |
| MCDONNELL (accepted) | 68   | 10 0 |
| All of Cork.         |      |      |

**DARENTH.**

For Repairing and Repainting Venetian Blinds at the Asylum for Imbeciles at Darent, near Dartford, Kent, for the Managers of the Metropolitan Asylums Board. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C.

|                                    |      |      |
|------------------------------------|------|------|
| McCarthy                           | £140 | 0 0  |
| Proctor                            | 90   | 0 0  |
| Williams & Son                     | 87   | 10 0 |
| James & Co.                        | 80   | 0 0  |
| Atkinson & Co.                     | 69   | 2 6  |
| Gearing & Co.                      | 65   | 12 6 |
| Godlonton                          | 61   | 5 0  |
| Meredith & Son                     | 59   | 0 0  |
| Simpson & Co.                      | 59   | 0 0  |
| Williams                           | 57   | 18 6 |
| Green & Co.                        | 57   | 17 6 |
| Saxby & Co.                        | 50   | 0 0  |
| Rugby                              | 50   | 0 0  |
| SAXBY & SONS, New Cross (accepted) | 37   | 10 0 |

**DRUMCONDRA.**

For Construction of 1,390 feet 12-inch Pipe Sewer, &c., Goose Green Avenue, Drumcondra Township. Mr. P. F. LEONARD, C.E., Engineer, 34 Lower Ormond Quay, Dublin.

|                     |      |      |
|---------------------|------|------|
| Wardrop & Son       | £245 | 11 0 |
| Pemberton           | 235  | 0 0  |
| Daley               | 230  | 0 0  |
| Tyrell              | 209  | 0 0  |
| SIMPSON (accepted)  | 202  | 0 0  |
| Dixon               | 200  | 0 0  |
| Engineer's estimate | 225  | 0 0  |

**SANITARY CONGRESS AND EXHIBITION.**

THE SANITARY INSTITUTE OF GREAT BRITAIN will hold its Eighth Congress at LEICESTER, on September 22, and following days. The Council invite Papers on subjects connected with Sanitary Science. Full particulars as to the conditions under which Papers are accepted, can be obtained on application to the Secretary.

The Health Exhibition, including Sanitary Apparatus and Appliances, will be held at the same time, and details are ready for distribution. E. WHITE WALLIS, Secretary. 74a Margaret Street, London, W.

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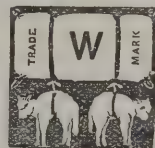
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|                   |           |
|-------------------|-----------|
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| Life Premiums     | 184,000   |
| Interest          | 128,000   |
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The novelty, superiority, and advantage of this patent consist in the heating surface being greater than any other Fire-grate introduced to the public. It is very simple in construction, and is made in the form of a Stove, the back of which is semicircular in shape, with gills behind and smoke-nozzle on top, all cast in one piece. The same can be attached to any design of a Register or Stove front. It is very suitable for schools, class-rooms, waiting-rooms, hospitals, offices, dormitories, and dwelling-houses, from the cottage to the mansion. Design and specification post free on application.

TESTIMONIALS.

"9 Victoria Chambers, Westminster, S.W.

"June 10, 1884.

"SIR,—I have much pleasure in testifying to the efficiency of your patent Warm-Air Fire Grate. It has been very successful, and given every satisfaction where I have used it.

Yours, &c.

"To Mr. Grundy.

JAMES WEIR, F.R.I.B.A."

"Baptist Chapel, Clapham Common, London. Richard Webb, Pastor, 10 Grafton Square.

"February 15, 1884.

"DEAR MR. GRUNDY,—I have pleasure in testifying to the excellency and efficiency of your patent Fire-Grate. It is the most charming invention for heating a large room I have ever known. I shall have pleasure in showing it to anyone who wish to have their schools or rooms pleasantly and efficiently heated."

From James Garry, Esq., Architect, West Hartlepool,

July 1884.

"DEAR SIR,—I have very great pleasure in stating that the first stove, or patent warm-air ventilating fire grate, adopted by me in school at Seaton, and a second in a Cocoa Palace, have given such satisfaction that I now order eleven to be inserted in New Upper Grade Schools in course of erection at West Hartlepool. They are the most economical, efficient, and easily managed stove at present before the public.

"Mr. John Grundy."

From Hon. and Rev. G. G. Talbot, M.A., Withington

Cheltenham.

"DEAR SIR,—You will be gratified to hear that the school is completely warmed by your new grate. It is the most economical and efficient that I have ever seen.

"Mr. John Grundy."

From F. J. Yates, Esq., Architect, Birmingham.

"The best of the kind I have seen. I shall have pleasure in securing their adoption whenever opportunity offers."

Apply to JOHN GRUNDY, 30 Duncan Terrace, City

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Works—TYLDESLEY, near MANCHESTER.



DUBLIN.

For Alterations and Additions to Maltster's House, Dublin Whisky Distillery Company (Limited). Mr. P. F. LEONARD, C.E., Architect, 34 Lower Ormond Quay, Dublin.

|                      |      |   |   |
|----------------------|------|---|---|
| Wardrop & Son        | £149 | 0 | 0 |
| Kernan               | 360  | 0 | 0 |
| Murray               | 355  | 0 | 0 |
| Tyrell               | 345  | 0 | 0 |
| Monks & Son          | 320  | 0 | 0 |
| MACKY (accepted)     | 320  | 0 | 0 |
| Clare                | 273  | 0 | 0 |
| Architect's estimate | 350  | 0 | 0 |

DULWICH.

For the Proposed Alleyne Boys' Schools, Dulwich, for the Governors of Dulwich College. Messrs. OLIVER & LEESON, Architects, Newcastle-on-Tyne.

|                   | Schools only. | Roads, &c. | Less Blue Slates. |
|-------------------|---------------|------------|-------------------|
| Higgs & Hill      | £12,884       | £320       | £260              |
| Peto Bros.        | 12,806        | 355        | 300               |
| Stephens & Bastow | 12,499        | 365        | 266               |
| J. & C. Bowyer    | 12,490        | 312        | 375               |
| Perry & Co.       | 12,331        | 320        | 350               |
| Howell & Son      | 11,384        | 380        | 325               |
| Wall              | 11,250        | 254        | 218               |
| Mitchell          | 10,410        | 396        | 350               |

ELLAND.

For Building Fire-proof Mill, Engine and Boiler Houses, Dule Room, Chimney, &c., Elland. Messrs. HORSFALL & WILLIAMS, Architects, Post Office Buildings, Halifax.

|                           |        |    |   |
|---------------------------|--------|----|---|
| Obank, Bradford           | £4,828 | 0  | 0 |
| Birkby & Son, Wyke        | 4,200  | 0  | 0 |
| Crawshaw Bros., Ripponden | 3,694  | 0  | 0 |
| J. & T. Riley, Ripponden  | 3,060  | 0  | 0 |
| Hanson, Halifax           | 975    | 16 | 0 |
| J. & J. Crowther, Elland  | 923    | 19 | 0 |
| Fleming, Halifax          | 899    | 0  | 0 |
| Noble, Halifax            | 898    | 16 | 0 |
| Wadsworth & Son, Halifax  | 880    | 0  | 0 |
| Wilson, Elland            | 840    | 0  | 0 |
| Furniss, Brighouse        | 840    | 0  | 0 |

DELPH.

For Building Twelve Houses for the Co-operative Society. Mr. A. BANKS, Architect, Oldham. Quantities by the Architect.

*Accepted Tenders.*

|  |        |   |   |
|--|--------|---|---|
| Winterbottom, bricklayer and stone-mason | £1,605 | 0 | 0 |
| Wood, joiner                             | 520    | 0 | 0 |
| Whitehead, plumber and glazier           | 140    | 0 | 0 |
| C. & W. Shaw, plasterer                  | 114    | 0 | 0 |

Slating not let.

ESTON.

For Building Retaining Wall, with Wrought-iron Railing before Messrs. Bolckow, Vaughan & Co.'s Offices, Eston. Mr. T. W. STAINTHORPE, District Surveyor.

|                                  |     |    |   |
|----------------------------------|-----|----|---|
| Atkinson, Old Eston              | £67 | 14 | 0 |
| Radge, South Bank                | 64  | 10 | 0 |
| FRANCE, Middlesbrough (accepted) | 62  | 19 | 4 |
| Surveyor's estimate              | 70  | 0  | 0 |

FORDINGBRIDGE.

For Pulling Down Present School at Hyde, near Fordingbridge, and Building School on Site. Mr. ROBERT J. BEALE, A.R.I.B.A., Architect, Palace Chambers, Bridge Street, Westminster.

|                              |      |    |   |
|------------------------------|------|----|---|
| Dibben, Salisbury            | £714 | 0  | 0 |
| Hubbard, Tottenham           | 628  | 0  | 0 |
| Harris, Salisbury            | 615  | 0  | 0 |
| Shering & Wheeler, Salisbury | 595  | 0  | 0 |
| Clarke, Bickton              | 565  | 0  | 0 |
| Tuck & Carley, Ringwood      | 560  | 0  | 0 |
| Head, Ringwood               | 552  | 9  | 0 |
| Tuck, Ringwood               | 520  | 15 | 0 |
| Shering, Fordingbridge       | 518  | 7  | 6 |
| Alexander, Ringwood          | 490  | 0  | 0 |
| MITCHELL, Downton (accepted) | 488  | 0  | 0 |

GRAMPOUND.

For Works in Connection with the Water Supply, Grampound.

|                                |      |    |   |
|--------------------------------|------|----|---|
| Julian, Truro                  | £120 | 0  | 0 |
| Thomas, Camborne               | 105  | 10 | 0 |
| Henderson & Son, Truro         | 94   | 0  | 0 |
| Tyzer, St. Austell             | 81   | 10 | 0 |
| TREGUNNA, Grampound (accepted) | 75   | 0  | 0 |

FARNHAM.

For Building new Mansion at Frensham, near Farnham, Surrey, for Mr. J. T. Woodroffe. Mr. A. E. PURDIE, Architect. Quantities by Mr. J. T. Carew, 22 Surrey Street, Strand.

|                       |         |   |   |
|-----------------------|---------|---|---|
| Diamond               | £10,837 | 0 | 0 |
| Patman & Fotheringham | 10,763  | 0 | 0 |
| Wall Bros.            | 10,543  | 0 | 0 |
| Goddard & Sons        | 10,211  | 0 | 0 |
| Roberts Bros.         | 9,992   | 0 | 0 |
| Tompsett & Kingham    | 9,961   | 0 | 0 |
| Carless & Co.         | 9,549   | 0 | 0 |
| Woods                 | 9,449   | 0 | 0 |
| Martin, Wells & Co.   | 9,200   | 0 | 0 |

HANLEY.

For Street Improvement Works, Hanley. Mr. J. LOBLEY, Borough Surveyor, Hanley.

|                                     |        |    |   |
|-------------------------------------|--------|----|---|
| Wild, Hanley                        | £1,167 | 13 | 1 |
| Buck, Burslem                       | 1,073  | 7  | 0 |
| Boughey, Stoke-on-Trent             | 1,027  | 17 | 0 |
| S. Smith, Stoke-on-Trent            | 1,026  | 12 | 9 |
| J. SMITH, Stoke-on-Trent (accepted) | 867    | 4  | 9 |

*Back Goner Street and Dunkirk Square.*

|                          |     |    |   |
|--------------------------|-----|----|---|
| J. Smith, Stoke-on-Trent | £42 | 3  | 0 |
| S. Smith, Stoke-on-Trent | 36  | 15 | 0 |
| Williams, Wolstanton     | 29  | 3  | 3 |
| Boughey, Stoke-on-Trent  | 28  | 19 | 6 |
| Buck, Burslem            | 28  | 5  | 0 |
| WILD, Hanley (accepted)  | 26  | 17 | 8 |

HAVERFORDWEST.

For Cast-iron Water Pipes (300 tons), Haverfordwest. Mr. J. W. SZLUMPER, Engineer, 6 Westminster Chambers.

Contract No. 1.

|                              | Pipes per ton. | Bends per ton. |
|------------------------------|----------------|----------------|
| Butterley                    | £5 5 0         | £8 0 0         |
| Silvester & Co.              | 5 5 0          | 9 10 0         |
| Cross & Co.                  | 4 16 8         | 8 0 0          |
| M'Farlane & Co.              | 4 15 0         | 9 0 0          |
| Cochrane & Co.               | 4 13 0         | 8 10 0         |
| Spittle & Co.                | 4 12 6         | 8 0 0          |
| Edington & Son               | 4 10 0         | 8 10 0         |
| FIRMSTONE & BROS. (accepted) | 4 1 3          | 7 10 0         |

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**HAVERFORDWEST—continued.**

For Cast-iron Pipes (90 tons), for Gasworks, Haverfordwest.

*Contract No. 2.*

|                                       | Pipes per ton. | Bends per ton |
|---------------------------------------|----------------|---------------|
| Butterley . . .                       | £5 7 6         | £8 2 6        |
| Silvester & Co. . .                   | 5 5 0          | 9 10 0        |
| Cross & Co. . .                       | 4 15 0         | 9 0 0         |
| Cochrane & Co. . .                    | 4 14 0         | 9 5 0         |
| Spittle & Co. . .                     | 4 12 6         | 8 0 0         |
| M'Farlane & Co. . .                   | 4 12 0         | 9 0 0         |
| Edington & Son . .                    | 4 6 3          | 8 10 0        |
| FIRMSTONE & BROS.<br>(accepted) . . . | 4 5 0          | 7 10 0        |

**HUDDERSFIELD.**

For Building Eight Cottages at Marsh, Huddersfield. Mr. JOHN EDWARD MOSELEY, Architect, 4 Wellington Buildings, Huddersfield. Quantities by the Architect.

Sheard, Lindley, mason.

Ramsden, Marsden &amp; Haigh, Paddock, joiner.

Robinson &amp; Son, Ma-sh, plasterer.

Hardcastle, Hillhouse, plumber.

Greenhough, Paddock, painter.

Chappel, Huddersfield, slater.

**KENDAL.**

For Rescating, &amp;c, Kendal Congregational Church. Mr. ROBERT WALKER, Architect, Windermere. Quantities by the Architect.

Collett, joiner.

Pennington, s'ating.

Jackson, painting, glazing and plumbing.

Steel &amp; Co., plastering.

**LITTLEBOROUGH.**

For Building Two Houses, Rakewood, Littleborough, for Messrs. J. &amp; J. Clegg. Mr. F. H. SHUTTLEWORTH, Architect, Littleborough. Quantities by the Architect.

Atkinson &amp; Sons, mason . . . £295 0 0

Taylor &amp; Co., joiner . . . 115 6 0

Mills, plumber . . . 32 10 0

Rushton, slater . . . 22 15 0

J. Whitworth, plasterer . . . 24 10 0

C. Whitworth, painter . . . 11 5 10

Total . . . £501 6 10

**LEYTONSTONE.**

For Well Pumps and Additions to Tank at the Union Workhouse, Leytonstone.

|                         |          |
|-------------------------|----------|
| Middleton & Co. . .     | £850 0 0 |
| Tyler & Sons . . .      | 746 0 0  |
| Brown . . .             | 745 0 0  |
| Jeakes & Co. . .        | 725 0 0  |
| Warner & Sons . . .     | 625 0 0  |
| Scott & Sons . . .      | 589 0 0  |
| J. & T. May . . .       | 570 0 0  |
| Low . . .               | 550 0 0  |
| Bennett & Sons . . .    | 515 0 0  |
| Horn & Sons . . .       | 492 0 0  |
| HARRIS (accepted) . . . | 492 0 0  |

**LONDON.**

For Building Board Schools, &amp;c., Hampton Wick. Mr. R. T. ELSAM, Architect, Hampton Wick. Quantities by the Architect.

|  |            |
|--|------------|
| Ventham & Gaze, Kingston-on-Thames . . . | £2,797 0 0 |
| Newland, Cobham . . .                    | 2,100 0 0  |
| Tozer, London . . .                      | 2,011 11 6 |
| Wheatley & Sons, East Moulsey . . .      | 2,000 0 0  |
| Jarvis, Surbiton . . .                   | 1,963 0 0  |
| Hardy, Cowley, Uxbridge . . .            | 1,929 0 0  |
| Scrivener & Co., London . . .            | 1,923 0 0  |
| Oldridge & Sons, Norbiton . . .          | 1,907 0 0  |
| Schofield, London . . .                  | 1,900 0 0  |
| Robb, London . . .                       | 1,889 0 0  |
| Constable, Hampton Wick . . .            | 1,870 0 0  |
| Wood, Hampton Wick . . .                 | 1,845 10 7 |
| Huckle, Norbiton . . .                   | 1,833 10 0 |
| Prestige & Co., London . . .             | 1,830 0 0  |
| Hickinbotham, Teddington . . .           | 1,810 0 0  |
| Collinson, Teddington . . .              | 1,795 0 0  |
| Bonell, Teddington . . .                 | 1,785 0 0  |
| Hiscock, Hounslow . . .                  | 1,755 0 0  |
| Piller, Teddington . . .                 | 1,728 0 0  |
| Harris, Sutton . . .                     | 1,699 0 0  |
| Manning, Barnes . . .                    | 1,695 0 0  |
| COLLIER, Teddington (accepted) . . .     | 1,536 0 0  |
| Brass & Co., London . . .                | 1,226 10 6 |

**LONDON—continued.**

For Erection of House and Shop, No. 31 Chapel Street, Broadway, Westminster, for Mr. W. C. Shean.

|                    |            |
|--------------------|------------|
| Colls & Sons . . . | £2,510 0 0 |
| Whitlock . . .     | 2,478 12 0 |
| Macey & Sons . . . | 2,379 0 0  |
| Scott . . .        | 2,367 0 0  |
| Faulkner . . .     | 2,346 0 0  |
| Shurmur . . .      | 2,250 0 0  |
| Holliday & Co. . . | 2,136 0 0  |
| Moyle & Son . . .  | 2,125 0 0  |
| Downs . . .        | 2,068 0 0  |
| Smith & Sons . . . | 2,059 0 0  |
| Prestige & Co. . . | 1,987 0 0  |
| Green . . .        | 1,828 0 0  |

For Rebuilding the Royal Standard Concert Hall, Westminster, and Making certain Alterations to the Public-house adjoining, for Mr. Wake. Mr. H. I. NEWTON, Architect, 17 Queen Anne's Gate, Westminster.

|                     |            |
|---------------------|------------|
| Godden . . .        | £6,905 0 0 |
| Royal . . .         | 6,896 0 0  |
| Shurmur . . .       | 6,870 0 0  |
| Steel Bros. . .     | 6,710 0 0  |
| Cook . . .          | 6,449 0 0  |
| Burman & Sons . . . | 6,377 0 0  |

For Repairs and Alterations to No. 304 Camden Road, N.W., for Mr. H. G. Bridges. Mr. WALTER J. EBBETTS, F.R.I.B.A., Architect, Savoy House, 115 Strand, W.C.

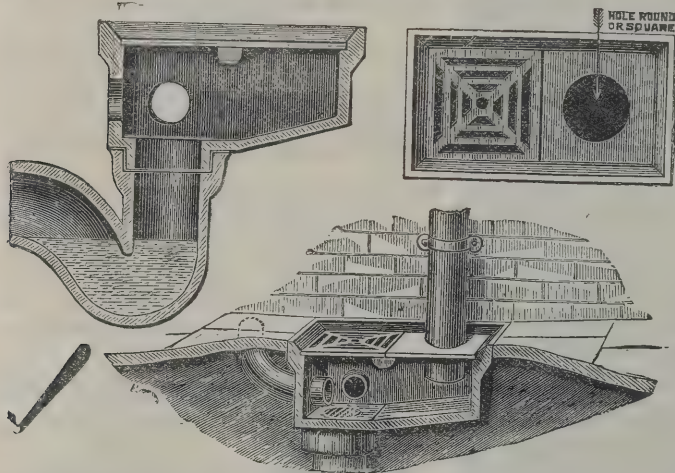
|                  |           |
|------------------|-----------|
| Williamson . . . | £628 10 0 |
| Steel Bros. . .  | 489 0 0   |
| Perkins . . .    | 473 0 0   |
| Baylis . . .     | 447 15 0  |
| Holt . . .       | 442 12 6  |

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|                         |          |
|-------------------------|----------|
| Rayner . . .            | £150 0 0 |
| Cannon . . .            | 143 15 0 |
| Robey . . .             | 127 0 0  |
| DODSON (accepted) . . . | 118 0 0  |

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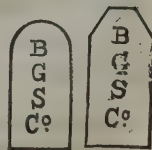
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## LONDON—continued.

For Building Board School, High Street, Shadwell. Mr. T. J. BAILEY, Architect.

|                       |         |   |   |
|-----------------------|---------|---|---|
| Palmer & Co.          | £21,634 | 0 | 0 |
| F. & F. J. Wood       | 20,947  | 0 | 0 |
| Perry & Co.           | 19,433  | 0 | 0 |
| Kirk & Randall        | 18,848  | 0 | 0 |
| Holloway              | 18,743  | 0 | 0 |
| Shurmur               | 18,630  | 0 | 0 |
| Hunt                  | 18,109  | 0 | 0 |
| Grover & Son          | 18,031  | 0 | 0 |
| Patman & Fotheringham | 17,837  | 0 | 0 |
| Shepherd              | 17,812  | 0 | 0 |
| Howell & Son          | 17,768  | 0 | 0 |
| Boyce                 | 17,634  | 0 | 0 |
| Jerrard               | 17,480  | 0 | 0 |
| Wall                  | 17,449  | 0 | 0 |
| Downs                 | 17,444  | 0 | 0 |
| Cox                   | 17,356  | 0 | 0 |
| J. Holloway           | 17,354  | 0 | 0 |
| Stimpson & Co.        | 17,033  | 0 | 0 |
| Oldrey                | 17,000  | 0 | 0 |
| W. & F. Croaker       | 16,463  | 0 | 0 |
| Gentry                | 16,273  | 0 | 0 |
| Hart                  | 16,053  | 0 | 0 |
| Lathey Bros.          | 15,710  | 0 | 0 |
| Brass & Son           | 15,654  | 0 | 0 |
| Wall Bros.            | 15,518  | 0 | 0 |
| Atherton & Latta      | 15,100  | 0 | 0 |

For Enlargement of Board School, Burrage Grove. Mr. T. J. BAILEY, Architect.

|                  |        |   |   |
|------------------|--------|---|---|
| Atherton & Latta | £5,716 | 0 | 0 |
| Kirk & Randall   | 5,141  | 0 | 0 |
| Johnson          | 4,936  | 0 | 0 |
| F. & F. J. Wood  | 4,898  | 0 | 0 |
| Howell & Son     | 4,874  | 0 | 0 |
| Shurmur          | 4,869  | 0 | 0 |
| Scrivener & Co.  | 4,848  | 0 | 0 |
| Lathey Bros.     | 4,833  | 0 | 0 |
| Stimpson & Co.   | 4,810  | 0 | 0 |
| Wall Bros.       | 4,800  | 0 | 0 |
| Jerrard          | 4,793  | 0 | 0 |
| H. L. Holloway   | 4,789  | 0 | 0 |
| Loneragan Bros.  | 4,692  | 0 | 0 |
| Tongue           | 4,650  | 0 | 0 |

## LONDON—continued.

For Building Board School, Upper Kennington Lane. Mr. T. J. BAILEY, Architect.

|                   |         |   |   |
|-------------------|---------|---|---|
| Perry & Co.       | £16,234 | 0 | 0 |
| W. & F. Croaker   | 16,169  | 0 | 0 |
| Scrivener & Co.   | 16,160  | 0 | 0 |
| Kirk & Randall    | 15,945  | 0 | 0 |
| Reading           | 15,824  | 0 | 0 |
| Turtle & Appleton | 15,809  | 0 | 0 |
| Shepherd          | 15,791  | 0 | 0 |
| Howell & Son      | 15,707  | 0 | 0 |
| Nightingale       | 15,569  | 0 | 0 |
| Lathey Bros.      | 15,327  | 0 | 0 |
| Grover & Son      | 15,262  | 0 | 0 |
| H. L. Holloway    | 15,243  | 0 | 0 |
| Hart              | 15,180  | 0 | 0 |
| Johnson           | 15,100  | 0 | 0 |
| Holloway Bros.    | 15,027  | 0 | 0 |
| Boyce             | 14,837  | 0 | 0 |
| Cox               | 14,770  | 0 | 0 |
| J. Holloway       | 14,695  | 0 | 0 |
| Gentry            | 14,654  | 0 | 0 |
| Wall              | 14,629  | 0 | 0 |
| Brass & Son       | 14,573  | 0 | 0 |
| Downs             | 14,556  | 0 | 0 |
| Atherton & Latta  | 14,546  | 0 | 0 |
| Wall Bros.        | 14,458  | 0 | 0 |
| Jerrard           | 14,439  | 0 | 0 |
| Oldrey            | 14,217  | 0 | 0 |

For New Warehouses and Buildings, Blackfriars, for the National and Provincial Plate-glass Insurance Company. Mr. MARSHALL N. INMAN, Architect. Quantities by Mr. Walter Barnett.

|                         |        |   |   |
|-------------------------|--------|---|---|
| Boyce                   | £4,667 | 0 | 0 |
| Holland & Hannen        | 4,144  | 0 | 0 |
| Mowlem & Co.            | 3,955  | 0 | 0 |
| Andrew & Nawsen         | 3,905  | 0 | 0 |
| Brown, Son & Blomfield  | 3,650  | 0 | 0 |
| Stimpson                | 3,533  | 0 | 0 |
| GROVES & SON (accepted) | 3,490  | 0 | 0 |

For Heating and Ventilating the Evangelical Protestant Deaconesses' Institute and Training Hospital, South Tottenham. BACON &amp; Co., London (accepted).

## LONDON—continued.

For Building Board School, Detmold Road.

Mr. T. J. BAILEY, Architect.

|                       |         |   |   |
|-----------------------|---------|---|---|
| Patman & Fotheringham | £10,770 | 0 | 0 |
| Larter & Son          | 10,740  | 0 | 0 |
| Wall                  | 10,690  | 0 | 0 |
| Downs                 | 10,580  | 0 | 0 |
| Oldrey                | 10,500  | 0 | 0 |
| Boyce                 | 10,370  | 0 | 0 |
| Kirk & Randall        | 10,249  | 0 | 0 |
| Lathey Bros.          | 10,228  | 0 | 0 |
| Hunt                  | 10,085  | 0 | 0 |
| Gentry                | 10,006  | 0 | 0 |
| Grover & Son          | 9,998   | 0 | 0 |
| Pritchard & Son       | 9,980   | 0 | 0 |
| Scrivener & Co.       | 9,977   | 0 | 0 |
| Wall Bros.            | 9,958   | 0 | 0 |
| Johnson               | 9,951   | 0 | 0 |
| F. & F. J. Wood       | 9,891   | 0 | 0 |
| Cox                   | 9,886   | 0 | 0 |
| Shurmur               | 9,792   | 0 | 0 |
| Jerrard               | 9,777   | 0 | 0 |
| Howell & Son          | 9,721   | 0 | 0 |
| Stimpson & Co.        | 9,700   | 0 | 0 |
| Atherton & Latta      | 9,550   | 0 | 0 |
| J. Holloway           | 9,490   | 0 | 0 |

For Alterations to the Victoria Hotel, Charterhouse Street, E.C., for Mr. J. S. Manley. Mr. ARTHUR W. SAVILLE, Architect, 99 Strand, W.C. Quantities supplied.

## Builder's Work.

|               |      |   |   |
|---------------|------|---|---|
| Walker        | £851 | 0 | 0 |
| Anley         | 820  | 0 | 0 |
| Smith         | 715  | 0 | 0 |
| Royal         | 696  | 0 | 0 |
| Heath         | 685  | 0 | 0 |
| Ward & Lamble | 677  | 0 | 0 |
| Spencer & Co. | 650  | 0 | 0 |
| Cook          | 631  | 0 | 0 |

## Perterer's Work.

|                |     |    |   |
|----------------|-----|----|---|
| Davidson       | 266 | 0  | 0 |
| Warne          | 244 | 0  | 0 |
| Heath          | 217 | 0  | 0 |
| Helling        | 211 | 0  | 0 |
| Warne          | 210 | 0  | 0 |
| Sanders & Sons | 203 | 0  | 0 |
| Watts & Co.    | 197 | 17 | 0 |
| Mathews        | 189 | 19 | 8 |

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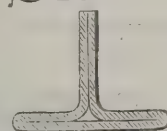
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**LONDON—continued.**

For Building Thirteen Shops, High Road, Kilburn, for Mr. O. Davies. Mr. EDWD. MONSON, jun., A.R.I.B.A., Architect, Grosvenor House, The Vale, Acton.

|                           |         |    |   |
|---------------------------|---------|----|---|
| Wickham, Chiswick         | £12,160 | 0  | 0 |
| Crabb, Acton              | 11,828  | 0  | 0 |
| Battley, Old Kent Road    | 11,150  | 0  | 0 |
| Pryor, Brondesbury        | 11,100  | 0  | 0 |
| Ridout, Oakley Square     | 10,700  | 0  | 0 |
| Edgar, Kentish Town       | 10,480  | 0  | 0 |
| Martin, Willesden Green   | 10,297  | 0  | 0 |
| Brass & Co., King's Cross | 9,950   | 0  | 0 |
| Hann & Co., Old Windsor   | 9,913   | 0  | 0 |
| Lyford, Shepherd's Bush   | 9,490   | 0  | 0 |
| Julian, Kilburn           | 9,300   | 0  | 0 |
| Went & Bowen, Feltham     | 9,028   | 0  | 0 |
| May, Acton                | 9,025   | 0  | 0 |
| Harris, Sutton            | 8,990   | 0  | 0 |
| Harriess, Brondesbury     | 8,416   | 0  | 0 |
| Goodwin, Brondesbury      | 8,273   | 10 | 0 |
| HUNT, Barnes (accepted)   | 8,250   | 0  | 0 |

For Building Dwelling-houses for Pier Master and Crew at Manager's Street, Poplar, E., for the Managers of the Metropolitan Asylums Board. Messrs. A. & C. HARSTON, Architects, 15 Leadenhall Street, E.C. Quantities supplied.

|                                    |        |    |   |
|------------------------------------|--------|----|---|
| Lunn                               | £1,586 | 0  | 0 |
| Potter                             | 1,400  | 0  | 0 |
| W. Johnson                         | 1,390  | 0  | 0 |
| J. H. Johnson                      | 1,337  | 0  | 0 |
| Chafen                             | 1,335  | 0  | 0 |
| Holland                            | 1,329  | 0  | 0 |
| Van Camp                           | 1,310  | 13 | 5 |
| Proctor                            | 1,280  | 0  | 0 |
| WARD & LAMBLE, Holloway (accepted) | 1,175  | 0  | 0 |

**MELTON MOWBRAY.**

For Additional Pens at the Cattle Market, Melton Mowbray.

|                   |     |    |   |
|-------------------|-----|----|---|
| Garner            | £31 | 16 | 6 |
| Cooke & Sons      | 30  | 15 | 0 |
| Sharman & Ladbury | 29  | 0  | 0 |
| HOOKE (accepted)  | 22  | 0  | 0 |

**MELKSHAM.**

For Construction of Stoneware Pipe Sewers, &c., Melksham. Mr. D. MACKENZIE, Surveyor.

|                              |      |    |   |
|------------------------------|------|----|---|
| Webb                         | £163 | 5  | 6 |
| Rains & Mortimer             | 133  | 8  | 0 |
| DAVIS & COLBOURNE (accepted) | 114  | 0  | 0 |
| Surveyor's estimate          | 117  | 19 | 5 |

**NEWCASTLE-ON-TYNE.**

For Sewering and Forming Streets on the South Byker Estate. Messrs. GEORGE & TAYLOR, Surveyors, 33 Westgate Street, Newcastle.

|                            |        |    |    |
|----------------------------|--------|----|----|
| Carrick, Durham            | £1,401 | 8  | 6  |
| Wood                       | 1,168  | 0  | 11 |
| Dixon, Durham              | 1,048  | 14 | 9  |
| Craig, Gateshead           | 1,033  | 12 | 4  |
| Smith                      | 1,004  | 7  | 10 |
| Simpson                    | 944    | 9  | 10 |
| Middlemiss                 | 924    | 1  | 2  |
| Dent & Pearson             | 918    | 3  | 2  |
| Scott, Jarrow              | 908    | 6  | 6  |
| Maughan, Jarrow            | 894    | 10 | 4  |
| J. J. Robson               | 891    | 14 | 11 |
| Wardlaw, New Gateshead     | 883    | 8  | 2  |
| Gelsharph                  | 882    | 8  | 1  |
| Telford & McQuire, Byker   | 876    | 1  | 10 |
| G. Robson                  | 848    | 15 | 2  |
| HILL & MAUCHLEN (accepted) | 797    | 17 | 10 |

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**NOTTINGHAM.**

For Extension of Corporation Stables, Eastcroft, Nottingham. Mr. ARTHUR BROWN, Borough Engineer, Architect. Quantities by the Architect.

|                  |        |   |   |
|------------------|--------|---|---|
| Smart            | £2,552 | 0 | 0 |
| Keeling          | 2,840  | 0 | 0 |
| Baynes           | 2,542  | 0 | 0 |
| Attenborough     | 2,495  | 0 | 0 |
| Vickers          | 2,480  | 0 | 0 |
| Bell & Son       | 2,468  | 0 | 0 |
| Hind             | 2,467  | 0 | 0 |
| Wartnaby         | 2,465  | 0 | 0 |
| Middleton        | 2,450  | 0 | 0 |
| Wheatley & Maule | 2,434  | 0 | 0 |
| ADAMS (accepted) | 2,400  | 0 | 0 |

**MORETON.**

For Construction of Iron Girder Bridge over the Lea at Moreton-on-Lugg. Mr. WM. CHEIAKE, Engineer, County Surveyor.

|                   |      |    |   |
|-------------------|------|----|---|
| Bowers & Co.      | £105 | 0  | 0 |
| Andrews           | 67   | 10 | 0 |
| Huckson & Warwick | 58   | 10 | 0 |

The above are exclusive of road-making and abutment walls, which will be done by the workmen of the Hereford Highway Board.

**OLDHAM.**

For Two Villas, Queen's Road, Oldham. Mr. A. BANKS, Architect, 46 Union Street, Oldham.

|                 |        |   |   |
|-----------------|--------|---|---|
| E. Whittaker    | £1,460 | 0 | 0 |
| Turner          | 1,460  | 0 | 0 |
| J. Whittaker    | 1,430  | 0 | 0 |
| Booth           | 1,420  | 0 | 0 |
| Schofield & Co. | 1,400  | 0 | 0 |
| Stephenson      | 1,350  | 0 | 0 |
| LEES (accepted) | 1,350  | 0 | 0 |
| Dyson & Sons    | 1,320  | 0 | 0 |

All of Oldham.

For Stone Boundary Wall, New Schools, Oldham Union. Mr. A. BANKS, Architect, 46 Union Street, Oldham.

|                           |        |    |   |
|---------------------------|--------|----|---|
| J. & S. Smethurst         | £1,945 | 0  | 0 |
| Staley                    | 1,920  | 0  | 0 |
| Mellor                    | 1,783  | 0  | 0 |
| J. & J. Whitehead         | 1,745  | 12 | 0 |
| Bebbington                | 1,719  | 0  | 0 |
| E. Whittaker              | 1,700  | 0  | 0 |
| DUNKERLY & SON (accepted) | 1,630  | 0  | 0 |

All of Oldham.

For Building Congregational Sunday Schools, Oldham. Mr. A. BANKS, Architect, Oldham. Quantities by the Architect.

|                   |        |    |   |
|-------------------|--------|----|---|
| E. Whittaker      | £2,300 | 0  | 0 |
| Schofield & Co.   | 2,216  | 10 | 0 |
| Booth             | 2,180  | 0  | 0 |
| Jackson & Randall | 2,173  | 0  | 0 |
| LEES (accepted)   | 2,095  | 0  | 0 |
| J. & J. Whitehead | 2,080  | 0  | 0 |
| Stephenson (late) | 2,070  | 0  | 0 |

All of Oldham.

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**OLDHAM—continued.**

|  |      |      |
|--|------|------|
| For Laundry Fittings, New Schools, Oldham Union. Mr. A. BANKS, Architect, 46 Union Street, Oldham. |      |      |
| Jeakes & Co., London . . .   | £930 | 0 0  |
| Benham & Sons, London . . .  | 865  | 0 0  |
| Leech Bros. & Hoyle, Manchester  | 587  | 0 0  |
| Thomas & Taylor, Stockport . . .   | 551  | 10 0 |
| BRADFORD & Co., Manchester (accepted)  | 565  | 0 0  |

**PLYMOUTH.**

For Building St. Matthias's Church, Plymouth. Messrs. HINE & ODGERS, Architects, Plymouth. Quantities by Messrs. Widnell & Trollope, Westminster.

*The Whole Work.*

|                            |         |     |
|----------------------------|---------|-----|
| Palk . . . . .             | £11,133 | 0 0 |
| Petrick . . . . .          | 10,977  | 0 0 |
| Berry . . . . .            | 9,779   | 0 0 |
| Harley . . . . .           | 9,150   | 0 0 |
| Marshall . . . . .         | 8,920   | 0 0 |
| FINCH (accepted) . . . . . | 8,778   | 0 0 |

*Without Upper Part of Tower.*

|                            |       |     |
|----------------------------|-------|-----|
| Palk . . . . .             | 9,023 | 0 0 |
| Petrick . . . . .          | 8,544 | 0 0 |
| Berry . . . . .            | 7,837 | 0 0 |
| Harley . . . . .           | 7,390 | 0 0 |
| Marshall . . . . .         | 6,787 | 0 0 |
| FINCH (accepted) . . . . . | 6,996 | 0 0 |

**READING.**

For Alterations and Additions to Premises for Mr. Harris, Draper, London Street, Reading.

|                            |      |      |
|----------------------------|------|------|
| Smith . . . . .            | £240 | 17 4 |
| Goswell . . . . .          | 237  | 10 0 |
| Grover . . . . .           | 235  | 0 0  |
| Simmonds . . . . .         | 228  | 0 0  |
| East . . . . .             | 225  | 0 0  |
| BLAKE (accepted) . . . . . | 215  | 0 0  |

**SHENLEY.**

For the Erection of a Pair of Cottages, Shenley, Herts., for Mr. John Briers. Mr. ROBERT J. BEALE, A.R.I.B.A., Architect, Palace Chambers, Bridge Street, Westminster. CARTER, Shenley (accepted) . £370 0 0

**RUGBY.**

For Alterations and Additions to Premises, Chapel Street, for the Rugby Co-operative Society.

|                                 |        |      |
|---------------------------------|--------|------|
| Wooldridge, Rugby . . . . .     | £1,710 | 0 0  |
| Rathbone, Hillmorton . . . . .  | 1,640  | 10 0 |
| Bradshaw, Rugby . . . . .       | 1,561  | 15 0 |
| Hollowell, Rugby . . . . .      | 1,534  | 0 0  |
| Heap, Dunchurch . . . . .       | 1,382  | 0 0  |
| Tew, Rugby (accepted) . . . . . | 1,375  | 0 0  |

**SHILDON.**

For Building Waggon Shops, Smiths' Shops, &c., at Shildon, for the North-Eastern Railway Company.

W. & R. BLACKETT, Bishop Auckland, (accepted).

**SUTTON.**

For Making up Roads, Sutton, Surrey. Mr. J. P. CURTIS, Surveyor.

*Grange Road.*

|                               |      |       |
|-------------------------------|------|-------|
| How . . . . .                 | £800 | 0 0   |
| Etheridge . . . . .           | 699  | 0 0   |
| Streeter . . . . .            | 694  | 0 0   |
| Jenner . . . . .              | 670  | 14 10 |
| WILLIAMS (accepted) . . . . . | 439  | 19 10 |

*Cedar Road.*

|                               |     |      |
|-------------------------------|-----|------|
| How . . . . .                 | 374 | 0 0  |
| Etheridge . . . . .           | 368 | 0 0  |
| Streeter . . . . .            | 333 | 0 0  |
| Jenner . . . . .              | 310 | 14 8 |
| WILLIAMS (accepted) . . . . . | 212 | 14 3 |

*Nursery Road.*

|                               |    |      |
|-------------------------------|----|------|
| How . . . . .                 | 93 | 0 0  |
| Jenner . . . . .              | 85 | 18 1 |
| Harris . . . . .              | 83 | 2 6  |
| WILLIAMS (accepted) . . . . . | 75 | 0 0  |

**SWINDON.**

For Alterations at V. W. H. Horse Repository, Swindon. Mr. W. H. READ, Architect, Swindon.

|                      |      |      |
|----------------------|------|------|
| Barrett . . . . .    | £306 | 10 0 |
| Wiltshire . . . . .  | 300  | 0 0  |
| Henley & Co. . . . . | 281  | 10 0 |
| Phillips . . . . .   | 273  | 0 0  |

**SWINDON—continued.**

For Building School and Class-rooms at Swindon. Mr. THOS. LANSDOWN, Architect.

|  |      |      |
|--|------|------|
| Jones & Son, Gloucester . . . . .      | £790 | 0 0  |
| Colborne, Stratton . . . . .           | 780  | 0 0  |
| Wiltshire, Swindon . . . . .           | 666  | 0 0  |
| Henley, Swindon . . . . .              | 659  | 12 0 |
| Barrett, Swindon . . . . .             | 616  | 0 0  |
| WILLIAMS, Swindon (accepted) . . . . . | 448  | 0 0  |

**SOUTH SHIELDS.**

For New Offices, Mill Dam Quay, for River Police and Tyne Port Sanitary Officers. Mr. MANHEW HALL, C.E., Borough Engineer, South Shields. Quantities by Mr. G. D. Irwin, Sunderland.

*Last Tender.*

|                                      |        | Allowed for Old Materials. |
|--------------------------------------|--------|----------------------------|
| Moore, S. Shields . . . . .          | £1,840 | 0 0                        |
| Hudson, S. Shields . . . . .         | 1,830  | 0 0                        |
| Burton, Newcastle . . . . .          | 1,799  | 13 8                       |
| Storar, Jarrow . . . . .             | 1,788  | 0 0                        |
| Elliott, N. Shields . . . . .        | 1,779  | 0 0                        |
| Allison, Whitburn . . . . .          | 1,730  | 0 0                        |
| D. & J. Rankin, Sunderland . . . . . | 1,718  | 0 0                        |
| Richardson, Gateshead . . . . .      | 1,502  | 10 0                       |
| Fishburn Bros., N. Shields . . . . . | 1,395  | 0 0                        |
| Atkin & Co., S. Shields . . . . .    | 1,337  | 0 0                        |

*Present Tender.*

|  |       | Allowed for Old Materials. |
|--|-------|----------------------------|
| Elliott, N. Shields . . . . .              | 1,779 | 0 0                        |
| Storar, Jarrow . . . . .                   | 1,750 | 0 0                        |
| Gillfillan Bros., S. Shields . . . . .     | 1,693 | 19 7                       |
| Hudson, S. Shields . . . . .               | 1,681 | 12 4                       |
| Allison, Whitburn . . . . .                | 1,670 | 12 0                       |
| Atkin & Co., S. Shields . . . . .          | 1,593 | 0 0                        |
| Mackey, S. Shields . . . . .               | 1,573 | 19 5                       |
| Harwood, S. Shields . . . . .              | 1,493 | 0 0                        |
| Fishburn Bros., N. Shields . . . . .       | 1,426 | 7 0                        |
| RICHARDSON, Gateshead (accepted) . . . . . | 1,407 | 1 0                        |

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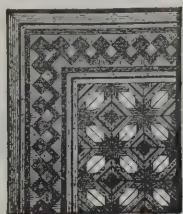
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MANUFACTURER OF

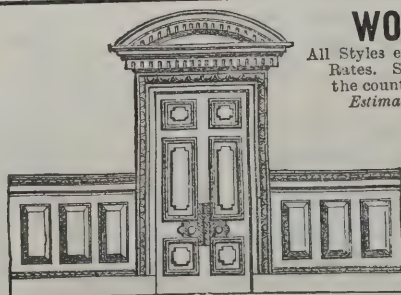
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BACKING.

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## WELLINGORE.

For Additional Farm Buildings, at Wellingore, Lincolnshire. Mr. J. B. CORBY STAMFORD, Architect.

|                              |      |    |   |
|------------------------------|------|----|---|
| Holmes, Wainfleet            | £618 | 0  | 0 |
| Dunkley, East Ville          | 598  | 0  | 0 |
| TURNER, Wainfleet (accepted) | 573  | 10 | 0 |

## WOODFORD.

For Erection of New Infant School and Alterations to Classrooms at Churchfield Schools, for the Woodford School Board. Mr. EDWARD TIDMAN, C.E., Architect, Surveyor to the London and Suburban Sanitary Survey Association, 30 Finsbury Pavement, E.C. Quantities supplied.

|                      |        |    |   |
|----------------------|--------|----|---|
| Swain                | £1,133 | 6  | 0 |
| Brass                | 865    | 10 | 0 |
| Newman               | 800    | 0  | 0 |
| C. Robson            | 790    | 0  | 0 |
| Brooks & Tester      | 765    | 0  | 0 |
| Dixon & Co.          | 739    | 0  | 0 |
| Scott                | 693    | 0  | 0 |
| Schofield            | 690    | 0  | 0 |
| Pratt                | 685    | 0  | 0 |
| Morgan & Newman      | 680    | 0  | 0 |
| Barnes               | 678    | 0  | 0 |
| Osborne              | 665    | 0  | 0 |
| Stewart              | 663    | 0  | 0 |
| J. J. Robson         | 644    | 0  | 0 |
| Watson               | 634    | 0  | 0 |
| Wells                | 623    | 0  | 0 |
| England & Thompson   | 612    | 0  | 0 |
| Foster               | 611    | 0  | 0 |
| Ranger               | 560    | 0  | 0 |
| Webb                 | 549    | 0  | 0 |
| Architect's estimate | 555    | 0  | 0 |

## WYCOMBE.

For New Road, Castle Hill, Wycombe, for the Right Hon. Lord Carrington. Mr. ARTHUR VERNON, Architect, 26 Great George Street, Westminster, and High Wycombe.

|       |      |    |   |
|-------|------|----|---|
| Stone | £255 | 10 | 0 |
| Hunt  | 249  | 0  | 0 |
| Hill  | 235  | 10 | 0 |

## TRADE NOTES.

Two large stained glass windows, designed and executed by Messrs. James Ballantine & Son, Edinburgh, have just been placed in the University Chapel, Vermont, U.S.A.

THE whole of the granite used in the erection of the Cobden Hotel, Birmingham (illustrated in *The Architect* of June 6), was supplied by Messrs. James Wright & Sons, of 112 John Street, Aberdeen. The grey granite was obtained from their Sylavethic Quarry at Alford, and the red granite from their Stirling Hill Quarries at Peterhead.

MESSRS. JONES & WILLIS, of London and Birmingham, supplied the richly-embroidered silk velvet altar cover, carved oak communion chairs, &c., for the chapel of the Holloway Sanatorium.

THE Lincrusta-Walton Company will issue on July 1 a new decorated pattern-book, showing upwards of one hundred different effects in colour. The price of the book will be 20s.

MEDICAL men have long been preaching, and are now beginning to practise, the employment on sanitary grounds of flooring laid without interstices to catch the dirt, and with polished, or at least smooth, cleanly, and washable surfaces. Costliness has been hitherto a drawback to the adoption of such flooring. The solid one-inch parquet floors of Bucher & Durrer (agents, Scheibler Brothers & Co., 23 New Broad Street, E.C.) supply the needed element of relative cheapness. Messrs. Bucher & Durrer, owning large Hungarian forests, are able to supply well-seasoned woods direct from their own sawmills, at prices much below those which have hitherto been current. Their floors are durable and solid, and have the advantage of being highly artistic. They will, it may be expected and desired, on hygienic as well as artistic grounds, come into extensive use for public institutions as well as private houses.

MESSRS. FOY, MORGAN & Co. have removed their offices from 108 to 88 Bishopsgate Street Within, E.C.

A HANDSOMELY carved oak pulpit, with prayer-desk and seat to correspond, has just been

supplied to St. Woollos Church, Newport, Mon. The work has been successfully carried out by Messrs. Jones & Willis, of Birmingham and London.

THE Bournemouth Commissioners have decided to erect eight of Norton's Patent Turnstiles at the east and west entrances and landing stages of their new pier, and Messrs. Le Grand & Sutcliffe, of 100 Bunhill Row, E.C., have been entrusted with the contract for them.

MR. ROGER LOWE, of Worsley Road, Farnworth, near Bolton, has recently laid his patent wood-block floors at the Anchors Inn, Bolton (Mr. J. Simpson, architect, Bolton); at the New Drill Hall, Coplaw Road, Victoria Road, Glasgow, for the 3rd L.R.V. (Mr. J. B. Wilson, architect, Glasgow); floors of lodges, Zoological Gardens, Walton, Liverpool (Messrs. W. Sugden & Son, architects, Leek, Staffs.); floor at Alms-houses, Milnthorpe (Mr. Joseph Bintley, architect, Kendal); floor at Ophthalmic Hospital, Maidstone; floors of landings and staircases, &c. (Mr. E. W. Stephens House, architect, Maidstone); floors of Adlington New Church (Messrs. T. D. Barry & Son, architects, Liverpool); floor of cottage at Mr. Latham's new house, Eddisbury, West Derby (Mr. J. F. Doyle, architect, Liverpool).

LIVERPOOL EXHIBITION: NAVIGATION, TRAVELLING, AND COMMERCE.—This exhibition, which is to be opened in Liverpool next year, promises to be most successful, as no effort is being spared by the Council to make it as widely comprehensive as possible. The objects of the exhibition are to be historical, commercial, and educational, and it is proposed to devote the surplus funds of the exhibition to the foundation in Liverpool of a school for technical, artistic, and industrial education. From an advertisement in another column, it will be seen that the executive council are offering premiums for the three best designs for a large advertising poster, illustrative of the objects of the exhibition. This will, no doubt, result in an interesting competition. It may be stated that the guarantee fund in connection with the exhibition has already reached 31,000*l*.

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The PORTER-CLARK PROCESS is largely employed in County Asylums, Hospitals, Schools, and private Mansions, and is adopted upon a much larger scale in many Industries. By this process the Lime and Magnesia are removed from the water, together with organic impurities and the calcareous deposits in pipes and boilers.

JOHN HENDERSON PORTER, Patentee, 1 &amp; 2 Tudor Street, London, E.C., furnishes the necessary Plant.

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## RAILWAY EXTENSION IN ESSEX.

THE large number of visitors that annually make Southend-on-Sea their summer health resort has induced the Great Eastern Railway Company to promote a line from their Colchester and Ipswich section, near Brentwood, direct to this popular watering-place. The new road—to be commenced shortly—will pass through a picturesque portion of Essex, and will at length afford railway communication to the ancient town of Rayleigh. It will, moreover, not only give an alternative route from London, but furnish great facilities of locomotion to the whole of the Eastern Counties, and directly connect the important military centres of Shoeburyness, Warley, and Colchester. A practical illustration of the enhanced value acquired by land in the vicinity of the new line was given at the sale of a building estate near Rayleigh, held at Southend a few days since by Mr. Alf. Baker, when exceptionally good prices were realised. It is expected that quite a little township will spring up on the main road between Rayleigh and Southend.

## POPULAR PHOTOGRAPHY.

DURING nearly the whole of the half-century that has elapsed since photography first became an accomplished fact—or, to be more precise, till within about the last decade—its processes have been almost universally associated with mystery, and those who practised them have been regarded as the possessors of a secret not to be lightly divulged. Most people have been content, at some time or other, to avail themselves of the art in order to obtain photographs of themselves and their surroundings—not always, we are free to confess, with the happiest results; but how those results were arrived at has remained an unsolved problem with the great majority. If they have thought about the matter at all, vague ideas of the action of light upon certain chemicals have pervaded

their minds for a time, and then their reflections on the subject have subsided.

This general absence of natural curiosity is not at all characteristic of our inquiring dispositions, and may be traced to a distinct cause—probably the disenchantment experienced by those few outsiders who have in the past essayed to penetrate the “mystery” of photography as it existed under the conditions of the now discarded “wet” or collodion processes. An amateur desirous of practising the art under those conditions was not only faced with the initial necessity of acquiring and maintaining a cumbersome “plant,” but the preparation of his photographic plates involved such precise and careful manipulation of highly-destructive chemicals, that his experiments were more often productive of disfigured hands and ruined clothes than they were of pictures worthy of the name. Small wonder, then, that the would-be amateur photographer, finding himself so heavily handicapped, should speedily have arrived at the conclusion that *le jeu ne valait pas la chandelle*.

At length, however, it was discovered that from gelatine in combination with salts of silver could be produced a dry and portable plate, which not only obviated all these disagreeable conditions, but was also sensitive to light in a much higher degree than the “wet” plate, thereby enabling the negatives to be taken with greatly increased rapidity. This discovery may be said to have effected a revolution in the art of photography, for concurrently with its perfection people with refined tastes began to recognise in it a medium of engrossing and profitable amusement. It is satisfactory to note that the leading manufacturing photographers—notably the London Stereoscopic Company—have done, and are doing, much to foster this movement by the simplification and perfection of the apparatus, as well as by other means; for the popularisation of this beautiful art is a consummation greatly to be desired, inasmuch as the scope of its application was of necessity confined, while its practice was restricted to the comparatively few professional photographers. Its adoption,

however, by amateurs (we use this term in its widest sense) has revealed the fact that there is practically no limit to its sphere of usefulness. To the student of architecture it is a most useful servant on a sketching-tour, in supplementing the work of his pencil, because for want of time many objects of study are not able to be done justice to in his note-book. To the astronomer photography is invaluable; and in this connection it may be stated that M. Janssen, of Paris, claims to have photographed the sun in less than one two-thousandth part of a second—a startling testimony to the perfection to which the manufacture of gelatino-bromide of silver plates has attained. To the naturalist and the student of the microscope the camera lends assistance which cannot well be over-estimated; and science generally—not excluding even the science of war—is largely indebted to photography for many of its successes. It will be remembered that during the last siege of Paris important letters and despatches were transferred by photography on to sheets of minute proportions, and these being attached to highly-trained carrier pigeons, were winged over the heads of the beleaguering Germans safely to their destination.

But to enumerate all the uses to which photography may be applied is here impossible; we will therefore now turn to its claims as an amusement.

Regarded then simply as a pastime, the principal charm of photography undoubtedly lies in the power with which its users are invested of reproducing by its means exact facsimiles of such objects, animate or inanimate, as may possess for them special interest. The child who “cries for the moon” is regarded by its elders as a prodigy of inconsistency; yet we suspect most of us might plead guilty to a similar spirit of covetousness where the beautiful in nature is concerned, though we may not express our desires so loudly. Photography affords us the power of indulging this feeling to a considerable extent. We can by its aid transfer, as it were, the beauties of nature to our own possession; and the opportunities for such transference are constantly recurring.

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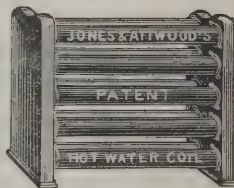
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The enjoyment of a pleasure-tourist, for instance, cannot but be largely enhanced if he be in possession of the means of pictorially recording for future contemplation the choicest scenic recollections of his trip. How often do we experience the desire to recount the glories of a favourite scene, yet are restrained from doing so by the conviction that verbal description is hopelessly inadequate? The delights of boating excursions and lawn-tennis parties, too—indeed of almost every kindred form of amusement—may for the same reason be materially increased.

And beyond the transient pleasure to be derived during the actual picture-taking, the work of the amateur has an enduring effect in the home circle; for the exhibition of such photographs provides a constant source of enjoyment, inasmuch as pleasant conversation is almost certain to be promoted by a comparison of the reminiscences thereby evoked. This pleasure, too, is heightened by the consciousness—not by any means to be despised—that the pictures are “home-made”: they possess, for obvious reasons, such a distinct advantage over those that may be seen exposed for sale in shop-windows.

Nor is the practice of photography necessarily limited to the summer months, as is generally supposed to be the case. Recent improvements in the apparatus have minimised the difficulties hitherto presented by the uncertain light and atmospheric conditions of winter. There are, in fact, reasons why wintry scenery is especially adapted for portrayal by photography. Landscape pictures born of the camera suffer somewhat, perhaps, in comparison with hand-painted scenes in one respect—that the colours of nature cannot as yet be reproduced through the medium of the lens, though in truth to form and detail the “sun pictures” are unsurpassable. Experiments in progress may, it is hoped, at no distant date, enable the photographic artist to compete with the knight of the brush and palette, even in respect of colour; but at present such colouring, if required, has to be supplied afterwards by hand. In winter, however, when the trees are fringed with rime instead of

leaves, when the stream is ice-bound instead of blue with the reflected sky, and when hill and dale is covered with a mantle of snow, then photography can reproduce with splendid effect, and in their natural colours, those wonderful contrasts of light and shade which are to be observed during the sterner half of the year. To drop, Silas Wegg like, into poetry:—

The flick’ring fall is o’er: the clouds disperse,  
And show the sun hung o’er the welkin’s verge,  
Shooting a bright but ineffectual beam  
On all the sparkling waste. Now is the time  
To visit nature in her grand attire.

And this applies equally to the amateur photographer as to other people. A series of winter landscapes, too, possess an increased interest if exhibited in contrast with a set of photographs taken from the same scenes during summer.

Countless other ways remain in which photography supplies amusement, but considerations of space will not permit of our alluding to them in detail. Still, it will be easily conceivable, from what has already been written, that the attributes possessed by the art sufficiently warranted the now successful attempt to render it a popular pastime. As we have already said, much of this success has been due to the manufacturers of apparatus, for in perfecting these great ingenuity has been employed in order to render them suitable for use by cultured people. Compactness combined with completeness has been the desideratum, and that this has been attained may be inferred from the fact that a complete set of instruments, including every requisite for landscape photography, can now be easily carried in one hand. The “development” of the plates, the only feature of the process at all approaching tedium, is also professionally undertaken for amateurs; and as this development can now be postponed, after exposure, almost indefinitely, without imperiling the success of the issue, this arrangement is a great boon to those who have a rooted objection to “drudgery” even in its mildest form. A noteworthy instance of the desire of manufacturing photographers to increase the popularity of the art is supplied in another direction

by the London Stereoscopic Company, who, quickly grasping the position that to promote the demand for their appliances they must themselves assist in creating a market for them, hit upon the happy—nay, liberal—expedient of giving free instruction in photography, by competent masters, to purchasers of their superior sets of apparatus. That this idea has proved successful will be apparent when we state that the company have been obliged, in consequence, to devote certain studios at their premises, 54 Cheapside, E.C., and 110 Regent Street, W., solely to the use of amateurs. We may add that the instruction is given quite privately, as opposed to class teaching—a palpable advantage when it is considered how many would be otherwise retarded in acquiring proficiency, or even restrained altogether from attempting it, by feelings of diffidence.

### THE EMPLOYERS' LIABILITY ACT.

AN important decision was given in the Queen's Bench Division on Monday in respect of one of the eleven cases of accident which occurred in connection with the fire at Messrs. Whiteley's premises in Westbourne Grove. Adjoining one side of the premises there were baths, separated by a wall 300 feet long and 60 feet high, built parallel with a wall of Whiteley's similar in size, and only one or two inches from it. On April 25, 1884, the fire took place, the premises being insured, and next day the defendants, Messrs. Greenwood, were put in possession by the insurance companies. The result of the fire was that Whiteley's wall was isolated and deprived of its internal supports, was somewhat inclining forwards, and likely to fall over the *débris*; the baths' wall by the side of it apparently standing intact, but which would be dangerous when isolated. Whiteley's wall being deemed dangerous, the surveyor of the Local Board of Works directed that both walls should be removed by Messrs. Greenwood, the contractors, and it was considered that the only safe course would be to erect a scaffolding alongside the baths' wall and take down each

## THE GREAT PROBLEM OF THE XIX<sup>TH</sup> CENTURY.

# VENTILATION WITHOUT DRAUGHT SOLVED.

The hitherto unsolved problem of “Ventilation Without Draught” is to be seen practically illustrated at FREDERICK HENRY SMITH'S Test Room, No. 68, 52 Queen Victoria Street, E.C., Patentee of the Automatic Siphonic Aspirator System of Ventilation. A personal inspection invited.

*Extract from the Annual Report of the “French Hospital and Dispensary,” issued 29th January, 1885.*

We have also to return our best thanks to Mr. Smith, who undertook gratuitously to repaint one of our wards and to apply a new system of ventilation of his own invention, which was very successful.

*Letter from David Urquhart, Assistant Engineer to Colonel Sir Francis Bolton, C.E.*

F. H. SMITH, ESQ., 52 QUEEN VICTORIA STREET, E.C.

4 THE SANCTUARY, S.W., LONDON: NOVEMBER 22nd, 1884.

In reply to your inquiry, I have much pleasure in certifying that your system of ventilation as applied to the “Island Room” of the illuminated fountains at the Health Exhibition reduced the temperature during the displays from about 110 deg. to about 70 deg., and thus enabled the men to perform their duties without inconvenience.—Yours faithfully,

DAVID URQUHART.

*Extract from the TIMES of March 14, 1885, page 7.*

“VENTILATION WITHOUT DRAUGHT.—This desideratum appears to be accomplished by a siphonic system devised by Mr. Frederick H. Smith, at whose offices, 52 Queen Victoria Street, London, we recently inspected the arrangement. The air supply is conducted into the apartment from the external atmosphere by means of air ducts, which terminate in distributing passages at the floor level. The exit for the vitiated air is placed in the ceiling, and consists of two tubes, a large and a small one, running parallel to each other between the floor joists in the case of rooms having others over them. In the case of rooms on top floors, or those having the roof directly over the ceiling, the tubes are placed concentrically, but the action and results are the same. The larger of the two tubes carries off the vitiated air, while the smaller one forms an induction tube for cold air, its outer extremity being open to the atmosphere. These two tubes or conduits are so connected that the passage of the heated air through the larger tube induces a current of cold air through the smaller one in a continuous stream. The result is a rapid clearing away of all deleterious gases and products of combustion as they accumulate, and the preservation of a pure atmosphere at an equable temperature in the apartment. In a small room at Mr. Smith's offices in which five large gas-jets were burning, the atmosphere was apparently quite innocuous at the level of about 7 feet, the temperature being about 60 deg. Fahr. At a higher level, however, and especially near to the ceiling, the temperature was high and the air greatly vitiated. It was demonstrated that this vitiated air was being drawn off through the exit tube, which acted as a powerful sucker. After turning off the gas-burners, and upon the temperature of the room generally becoming lowered and equalised, a feeble upward action was still maintained in the upcast tube, but there was no down-draught whatever. The system has already been applied to a church and other buildings with acknowledged success.”



wall inch by inch from the top. A gang of men were therefore engaged by Messrs. Greenwood for the purpose. In the meantime, however, on May 1 (in consequence, it was said, of a wind), the upper part of Whiteley's wall fell forwards upon the *débris*, while the lower part, some 10 feet or 12 feet in height, fell backwards upon and against the baths' wall and threw it down, and it fell upon the men who were at work, causing severe injuries to eleven of them. Eight or nine of them had brought actions against Messrs. Greenwood, the contractors, under the Employers' Liability Act, two or three of them being too late with their notices. These actions under the Act were brought in the County Court, and this was the first trial, and had already been twice tried, the others being removed into the High Court for trial and standing for trial next week. At the first trial of the present case, the negligence imputed to the defendants, Messrs. Greenwood, being that they had not shored up the walls, the jury found for the plaintiff for 20*l*. The County Court Judge had set aside the verdict, however, as against the weight of evidence; but on the second trial there was a claim at common law as well as under the Act, and the jury gave a verdict for the plaintiff for increased damages—50*l*. Then there was an application to set aside that verdict on the ground that there was no evidence of liability, and this now came on to be argued.

Counsel for the defendants, having obtained a rule *nisi* for a new trial on the ground that there was no evidence of negligence on the part of the contractors, appeared in support of it, and argued that there was no evidence for the jury of negligence on their part or on the part of their manager.

Lord Coleridge said that there was no evidence of negligence to sustain the verdict. It appeared that the real cause of the danger was in Whiteley's wall; the other was not injured. The plaintiff was accustomed to dangerous work of this kind; in pulling down buildings there was always more or less danger. The walls were not placed in charge of the defendants until the evening of April 30; the fall of the

walls took place early in the morning of the next day, May 1. Until that morning nothing could have been done. The danger was in the state of Whiteley's wall and its liability to fall. The course adopted was to take down both walls brick by brick from the top, and that appeared to be a proper course to be taken, though while it was being taken the walls fell. What was there which might have been and ought to have been taken before they fell? The case was put on the trial as the want of shoring. But in the process of shoring the men must have been brought close to the walls, and working at the walls, and so it would have been just as dangerous as putting up scaffolding; perhaps more so. It was impossible, therefore, to support the case for the plaintiff on that ground, and there was no evidence of negligence in that way to sustain the verdict, and, that being so, the judgment ought to be entered for the defendants.

Mr. Justice Mathew concurred, and judgment was given for the defendants.

### CONTRACTS BY ACQUIESCENCE.

A CURIOUS case has been tried lately in the Sheriff Court, Falkirk, in which an endeavour was made to base a contract on an application for information. The plaintiff, Mr. Baird, is the proprietor of patent girders, which were specified to be used in a new central school at Stenhouse Muir, for which the defendants, Messrs. J. & A. Main, had obtained the contract. The plaintiff wrote to the contractors offering to supply the girders. No reply having been received to this letter, he applied to Mr. Black, the architect for the building, drawing his attention to the fact that the girders had not been ordered from him, and explained that as they were patented they could not be ordered from any one else. Mr. Black replied that it was not for him to order the girders, and referred Mr. Baird to the contractors. The plaintiff subsequently saw the defendants at Falkirk, and sent an offer to supply the goods at certain prices. The defendants did not reply to this,

but six weeks afterwards, by instruction of the architect, they wrote asking that a section of the beams should be sent, and they added that they would require them in about six weeks. Mr. Baird forwarded to the defenders a section of the beams as desired, and stated that he would now go on with the work, so as to have them ready within six weeks. To that letter he had received no reply, but one of the defendants had called in his absence at his office in Glasgow about ten days afterwards, and had left a message to the effect that the beams were not sufficiently strong. It was contended, on behalf of the plaintiff, that a contract had been constituted by the defendants' silence and acquiescence. On the other side it was maintained that no contract had been made, and that the letter, which the plaintiff alleged was an order, had been merely a letter of inquiry. The architect had not been satisfied with the strength of the girders, and had substituted others for them. The Sheriff Substitute has issued an interlocutor, in which he finds that no contract was concluded between the parties for the supply of the girders, and has given judgment, with costs, for the defendants.

### THE NATIONAL PORTRAIT GALLERY, EDINBURGH.

THE erection of the Scottish National Portrait Gallery and Antiquarian Gallery is about to be commenced. A meeting of the Board of Trustees for Manufactures was held on the 19th inst. when the tenders of the following contractors were accepted:—masonry, Messrs. Kirkwood; carpentry, Mr. R. Shillinglaw; ironwork, Messrs. Peter Bell & Son; slating, Mr. Robert Graham; plumbing, Mr. John White; plastering, Mr. W. Baird; glazing, Mr. Robert Ross. The total amount does not reach 20,000*l*. The plans have been prepared by Dr. Rowand Anderson. As the site in Queen Street is likely to offer no difficulty in getting out foundations, it is anticipated that the works will be completed in about eighteen months.

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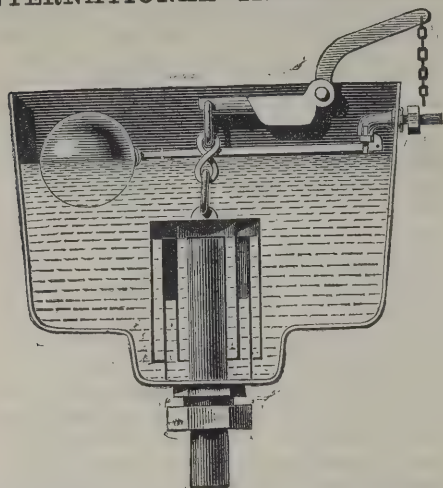
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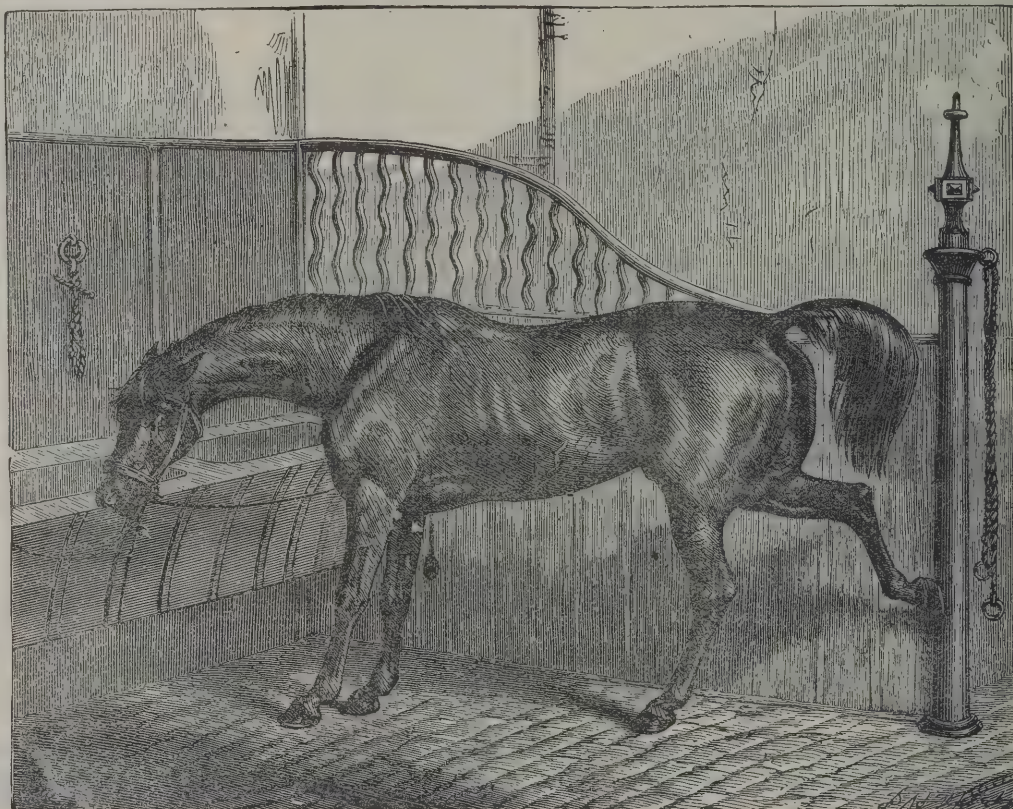
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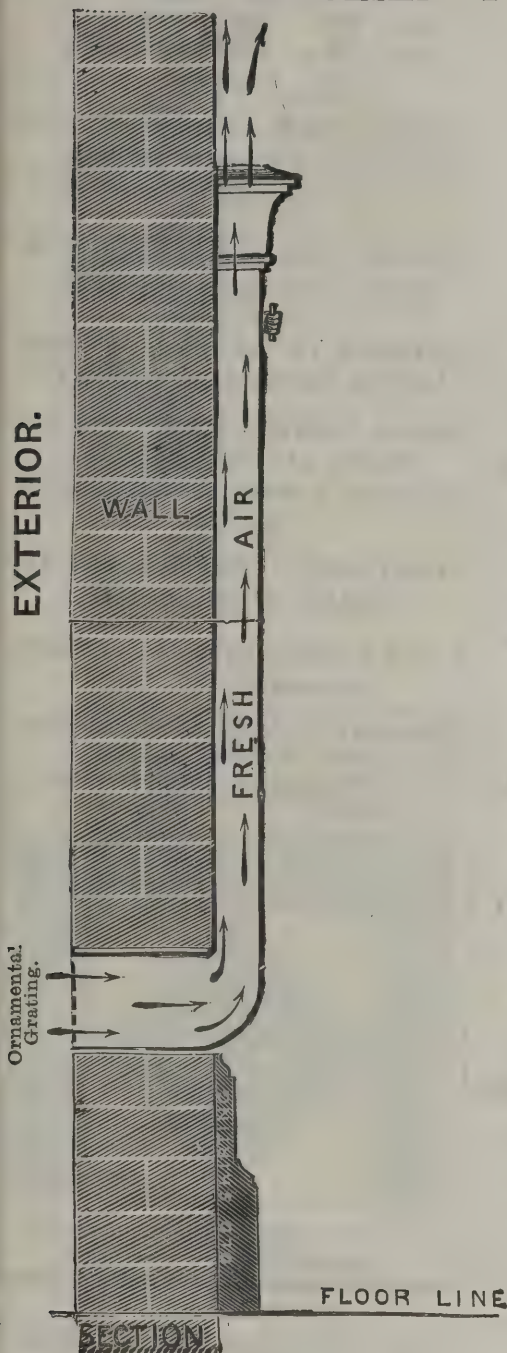


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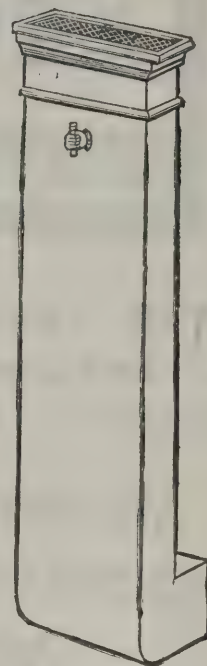
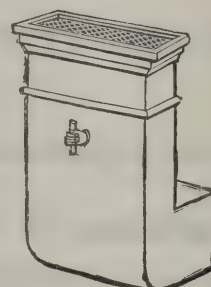
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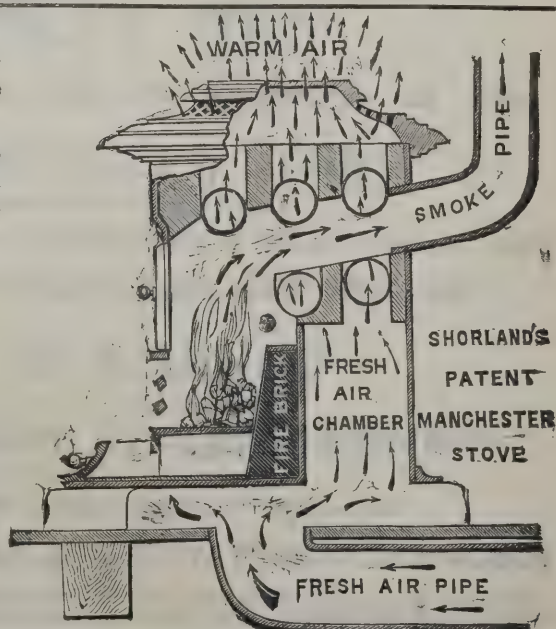
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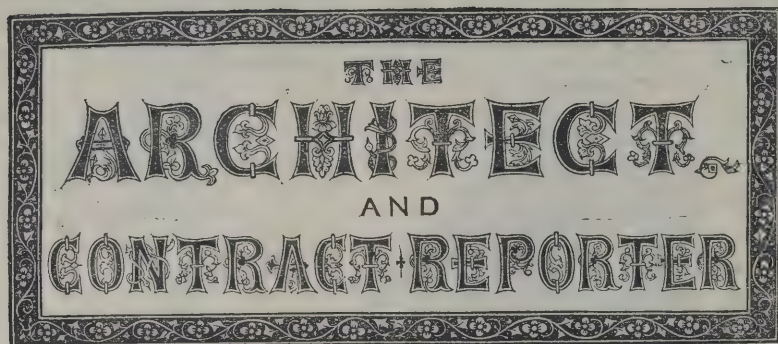
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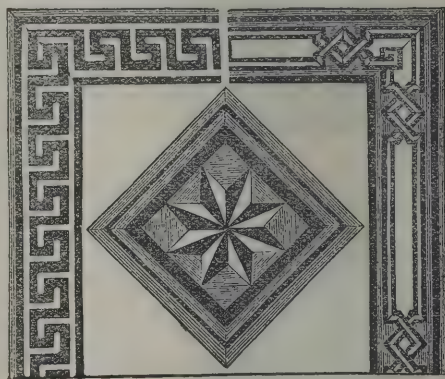
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